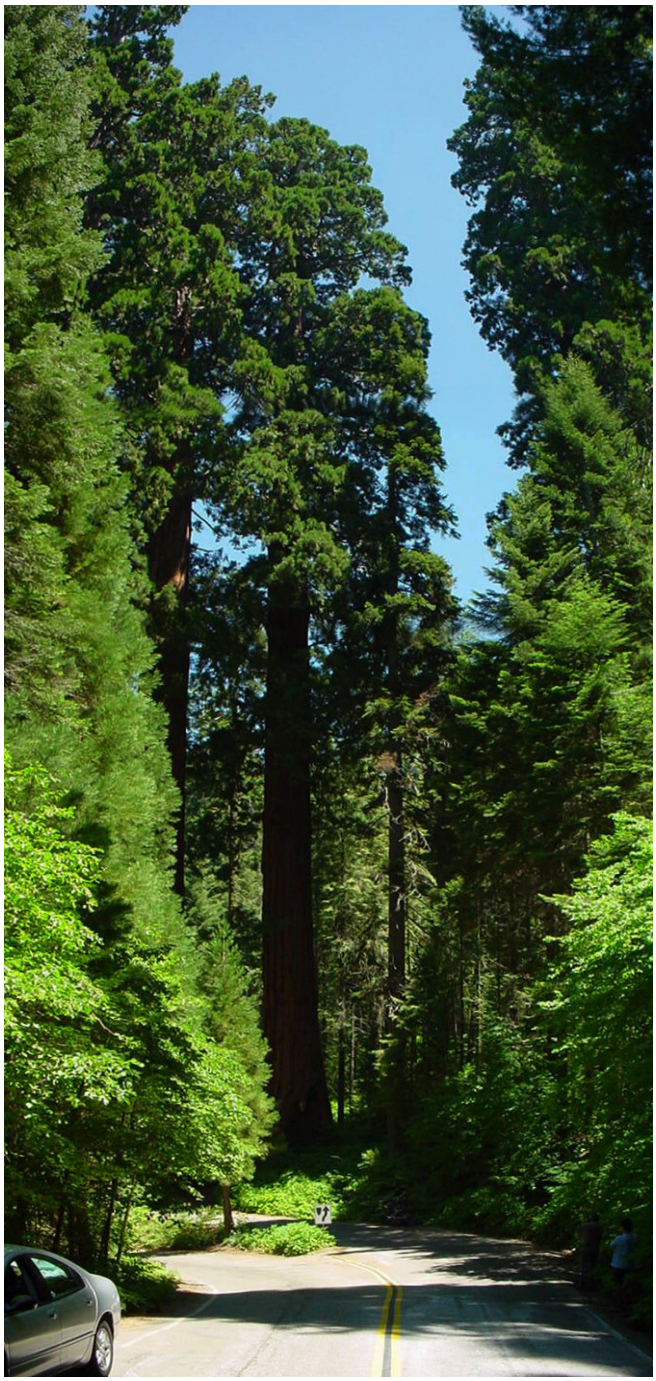
Central Federal Lands Highway Division
US Department of Transportation - Federal Highway Administration



REQUEST FOR PROPOSALS DTFH68-06-R-00008

ATTACHMENT J-5

ENGINEER'S ESTIMATING, BIDDING, AWARD, AND CONSTRUCTION SYSTEM SOFTWARE DEVELOPMENT

Section C Description/ Specifications/ Work Statement

May 1, 2006

SECTION C — DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C1.1 GENERAL

Federal Lands Highway (FLH) is a part of the Federal Highway Administration (FHWA), an agency within the U.S. Department of Transportation. Unlike the Federal-Aid program area of FHWA which is responsible for the Nation's highway systems; FLH, through the FLHP program, provides funding for more than 90,000 miles of federally owned and public authority-owned roads which serve Federal lands and territories.

FLH provides planning, design, and construction engineering services to Federal Land Managing Agencies (FLMA) such as the National Park Service, Forest Service, Military Surface Deployment and Distribution Command, Fish and Wildlife Service, and Bureau of Indian Affairs.

FLH is headquartered in Washington, DC, with Division offices in Lakewood Colorado, Sterling Virginia, and Vancouver Washington. Central Federal Lands Highway Division (CFLHD) in Lakewood Colorado services the needs of FLMA in 14 western States, Hawaii, and American Samoa. Eastern Federal Lands Highway Division (EFLHD) in Sterling Virginia services the needs of FLMA for 31 eastern States, Puerto Rico, and the Virgin Islands. Western Federal Lands Highway Division (WFLHD) in Vancouver Washington services the needs of FLMA in Oregon, Washington, Idaho, Montana, Alaska, and Yellowstone and Grand Teton National Parks in Wyoming.

Each Division has numerous field offices responsible for the administration of highway construction projects. These small, temporary offices can be located in remote parts of the U. S. and its territories. FLH is comprised of approximately 650 employees of which 96% are located in the Division offices. FLH's mission is "Improving transportation access to and within Federal and tribal lands and providing technical services to the highway community."

FLH is replacing and enhancing the current Engineer's Estimate System (EES) and Construction Progress Payment System (PPS) applications with a new, state-of-the-art transportation engineer estimating, bidding, award, and construction system.

The Contractor is required to furnish, the new application software, maintenance of the application software, training, and other contractor support services in conformance with the terms and conditions of the contract.

C1.1.1 EXISTING SYSTEM

The existing EES is a series of FoxPro programs that assists Highway Engineers in the development of cost estimates for highway construction projects during project design. The EES produces documents that are incorporated into a solicitation package for the construction of highway projects. The program validates bid prices, identifies bidder ranking, and produces pertinent documents required for award of the contract. After a highway contractor is selected pertinent data is sent to the PPS. The PPS is a Windows based Microsoft Access database program that is used for tracking progress information on a roadway construction project (Inspector Daily Reports), submitting "progress estimate" reports back to the division offices to

process for payments for the contract, and generating the "summary book" (a detailed description of how the project was constructed, including materials, equipment, and personnel). The EES and PPS consist of the programs listed in the Current Software Appendix.

C1.2 USERS OF THE SYSTEM

Users of this software system will include the following:

- Federal employees (approximately 100 users per Division)
    - System Administrators that control software and access to the program and data.
    - Planning and Programming engineers to create preliminary estimates for projects and for engineering studies.
    - Design engineers that create estimates for roadway projects.
    - Procurement personnel that produce contract documents and enter bid data received from Contractor bidders.
    - Construction personnel to track roadway projects Contractor progress and progress payments.
- Contract employees (approximately 25 users per Division).
    - As procurement personnel, produce contract documents and enter bid data received from Contractor bidders.
    - As construction personnel, track roadway projects Contractor progress and progress payments.
- A/E Consultants (approximately 50 users per Division).
    - Planning and Programming engineers to create preliminary estimates for projects and for engineering studies.
    - Design engineers that create estimates for roadway projects.
- Construction Contractors (approximately 100 users per Division).
    - For bidding (use of the bid schedule to submit bids).
    - For preparation of pay notes, invoices, and tracking work during construction.

C1.3 OBJECTIVE

To improve the engineer estimating, bidding, award and engineering construction capabilities in each of the three Federal Lands Highway Division offices and field offices, including:

1. Develop a new software application, the Engineer Estimating, Bidding, Award and Construction System (EEBACS) using current technology and software that is extensible, expandable, standards based, and security compliant. A Web-based system utilizing an Oracle database that will be maintainable and scaleable.
2. Ensure that the EEBACS can be made fully compatible with future operating system and database software modifications for the life of the contract.
3. Provide full-service maintenance for the EEBACS software described herein. It is understood that the EEBACS software maintenance, any future FHWA EEBACS enhancements (1000 hour per year enhancements, see number 4 below), user documentation, and user documentation updates are included in the initial proposal. Proposals shall include a comprehensive maintenance plan for configuration and change management for the maintenance of the software. See Section C6.12.

4. Provide for programming services to modify the EEBACS software. It is the FHWA's intent to keep system modifications to a minimum; however, some modifications will be required in order to accommodate future changes in design, acquisition, or construction procedures or policies. Include in the proposal 1,000 hours for performing this work and include a schedule showing the price that would be charged if additional hours are added, for the 5-years after the acceptance of the EEBACS. No work is to be charged to these hours unless approved in advance by the CO. Any additional hours above the 1,000 hours per year must also be approved by the CO via contract modification before any work is performed. Substantial enhancements or modifications (greater than the 1000 hour per year, discussed above) to the EEBACS software directed by the FHWA may require renegotiation of the Contract Line Item for System Maintenance.
5. Any software developed by the Contractor at FHWA's expense will be the property of FHWA. When requested, the Contractor will provide FHWA the source code, system documentation and user documentation. Source code (Oracle architecture, schema, table/query/report/etc.) structure will be provided prior to implementation and any subsequent updates/upgrades will include delivery of the updated source code. See Rights in Data clause FAR 52.227-14, Alternate III in Section I of this RFP and Representations of Limited Rights Data and Restricted Computer Software, FAR 52.227-15 located in Section K of this RFP.
6. Provide for a pre-work meeting within 30 days after notice to proceed. Coordinate with the Government to hold a face to face meeting at the Central Federal Lands office in Lakewood, Colorado. The pre-work meeting will be utilized to establish government contacts and to discuss in detail the management plan for the EEBACS project. If it is determined necessary additional information gathering meetings will be scheduled to make the offeror aware of FLH processes relating to EEBACS. Develop schedule and agendas for additional meetings at the pre-work meeting.

C1.3.1 Delivery Schedule and Deliverables.

Provide a comprehensive delivery schedule plan for all the deliverables within the contract. Provide in the plan for EEBACS component delivery, user documentation delivery, training and training materials delivery, maintenance and support. Include dates of delivery in the plan.

The following are deliverables for the EEBACS

- Kick-off meeting plan
- Kick-off meeting notes and action register
- Information gathering meeting plan
- Information gathering meeting notes and action register
- EEBACS component software
    - Design component
    - Acquisitions component
    - Construction component
    - Administrative component
    - EEBACS main interface (providing access to EEBACS and all components of EEBACS)

    - Component software installation
    - EEBACS Installation plan
    - Configuration of Government provided servers
- EEBACS training
- EEBACS training materials (electronic and printed)
- EEBACS documentation and manuals (electronic and printed)
- EEBACS maintenance
- EEBACS support
- Monthly status reports (deliver to Project Manager only)

Deliver all contract deliverables as follows:

Delivered FOB to:
Federal Highway Administration
Eastern Federal Lands Highway Division
Loudon Tech Center
21400 Ridgetop Circle
Sterling, Virginia 22170

Federal Highway Administration
Central Federal Lands Highway Division
P.O. Box 25246
12300 West Dakota Avenue
Lakewood, Colorado 80228

Federal Highway Administration
Western Federal Lands Highway Division
610 East Fifth Street
Vancouver, Washington 98661

Deliver software and other electronic media via compact disks (CD's) or DVD disks as appropriate.

C1.4 INSTALLATION

Include an installation plan for the EEBACS. The implementation schedule must be included in the overall system development schedule. The installations are to be performed at the FLH offices and must be fully documented. The installation plan must include all of the information required for a successful implementation including:

1. The proposed implementation schedule for each component of the system. If the system is to be installed by component, the desired sequence is Design, Acquisitions, and Construction including the administration interfaces required for each component.
2. Proposed testing schedule and procedures includes the following:
    a. Tests to ensure the components perform the intended functions

b. Appropriate field testing and verification that Construction component functions in remote field locations and conditions that exist on some FLH highway projects.
c. Ensuring that data flows properly between components
d. Ensuring security requirements are met
e. Performance, availability, backup, and restore testing.
f. Tests to ensure that the EEBACS is 508 compliant.

3. Data migration schedule, including a quality control plan for data migrated from FHWA exiting systems to the new EEBACS.
4. The proposed sequence of installation at each office.
5. Resources that the offeror expects the Government to provide including materials and manpower.
6. Resources that the need to be made available to the offeror

The offeror is responsible for all per diem, travel expenses, etc., incurred by offeror for the installation of the system.

The Government will furnish as required at each of the field Divisions' servers, operating system software, database software and other ancillary equipment and software required for installation and operation of the EEBACS. After approval of the offeror's proposed architecture by the government, the offeror and the Government will evaluate what additional hardware and software may need to be procured by the Government to support the EEBACS.

C1.5 TRAINING

Submit a proposed training plan for the system. The training plan must include how training will be handled for at least each of the following groups for each component of the program. Provide for coordination with the FLH Divisions for training space and use of government equipment during the training. Indicate the type of training that will be provided (i.e. Instructor-led or computer-based):

1. Information Technology support personnel including local database administrators (5-10 students per Division)
2. Administrators for each system component (5-10 students per Division
3. End users of each component (20-35 Designers per Division; 5-10 Acquisition personnel per Division; 20-35 Construction personnel per Division)

C1.6 DOCUMENTATION AND MANUALS

1. Documentation and Manuals
   a. Documentation and Manuals Required
      (1) Provide Software and System Documentation (include at a minimum): database schemas, data dictionary, entity relationship, data flow or other such diagrams documenting the system architecture, and source code documentation.
      (2) Provide for on-line help documentation for each of the components within the EEBACS application. Outline the methods and extent within the proposal.
      (3) Administrator Guides: Prepare Administrator Guides for each component. Make guides printable as a whole or separately as selected by the user.
         (a) Database Administration
         (b) Overall System Administration
         (c) Design Component
         (d) Acquisitions Component
         (e) Construction Component
         (f) EEBACS Administrative and Special Interfaces Component
      (4) User Guides: Prepare User Guides for each component. Make guides printable as a whole or separately as selected by the user.
         (a) Design Component
         (b) Acquisitions Component
         (c) Construction Component
         (d) EEBACS Administrative and Special Interfaces Component
      (5) Provide Review and Acceptance of Documentation
         (a) For each new or revised set of documentation deliver draft documentation (electronic) to the government for its review. The government will have 30 working days to review and comment on the draft documentation.
         (b) Incorporate government's comments within 20 working days into the final documentation and to deliver the documentation to the government as set forth below.
         (c) Deliver the final documentation as set forth below.

   b. Documentation Source and Copies:
      (1) Supply documentation in both Microsoft Word and Adobe Acrobat format. Documentation must meet the requirements of Section 508 of the Rehabilitation Act in accordance with Section C6.
      (2) Format Word and Adobe files for printing to use both sides of the paper
      (3) Supply Word and Adobe files on CD or DVD. Supply three sets of the CDs or DVDs (one set per Division). The media delivered as part of this project must have printed labels stating what documents are on the media, the release versions, and the date.
      (4) Printed Copies
         (a) Supply12 printed copies (4 to each Division) of all user documentation
         (b) Supply 3 copies of all system and administrator documentation (1 to each Division).

(5) The Government retains the right to copy, modify, and distribute the electronic and paper copies of all documents or portions thereof created for or delivered with the system or for training for use by internal users, external partners, or any other use the Government deems appropriate.

C1.7 MEASUREMENT UNITS

Provide the capability for EEBACS to work in either U.S. Customary or Metric units of measure. Provide the capability to set/change the unit of measure at any time during the highway project life. Adjust data like quantities and unit prices for the highway projects "on-the-fly" (instantaneously) when the unit of measurement is changed.

C1.8 MASTER PAY ITEM LIST

The master pay item list is comprised of unique pay items that are used to define work for payment within highway projects. The unique numbers assigned to the items of work serve as input into EEBACS to develop highway project estimates of cost. The unique pay item numbers serve as a basis or key within all of the components of the EEBACS. A unique pay item number, once assigned to the master pay item list, is not changed except as noted below.

The Master Pay Item List is comprised of the following data fields (See Data Diction nary Appendix –for existing program pay item table):

- Pay Item Number
- Pay Item Description (U.S. Customary Units)
- Pay Item Description (Metric Units)
- Pay Unit (U.S. Customary Units)
- Pay Unit (Metric Units)
- Pay Decimal
- Bid Decimal
- Incentive type
- Standard Specifications FP Year

The Federal Lands Highway updates their Standard Specifications approximately every five years. Pay item number are tied to the Section numbers of the Standard Specifications. Adjustments to pay item numbers are avoided as much as practical, but the unique pay items may change from one Standard Specification FP Year to another. These fields should only be changed, added to, or deleted by a system administrator for that component.

C1.9 Project Milestones and Estimate Milestones

During the life of highway projects, there are defined milestones (points in the progress of the projects) that have been established by the Federal Lands Divisions. Provide a means for EEBACS to track these milestones and to store all EEBACS data for the highway project at these junctures. The highway project data and estimate data, once stored by the milestone process, is not to be altered in any way. Estimate milestones will typically be stored at highway project milestones (i.e. Design-30% complete). Estimate milestones must also be able to be stored at

points that the user determines at any point during the highway project lifecycle. Another function of milestones will be the ability to transfer control of the data from one component user to another (i.e. Design to Acquisitions and Acquisitions to Construction). Data in the system is to be viewable by all users but actual control of the data to make changes is assigned to a specific component users's office (i.e. Planning, Highway Design, Acquisitions, and Construction).

Milestone	Milestone Type	Data Control	Remarks
Program estimate	Project	Planning	
Scoping	Project	Design	
15% PS&E	Project	Design	
30% PS&E	Project	Design	
50% PS&E	Project	Design	
70% PS&E PIH Internal Review	Project	Design	
70% PS&E PIH External Review	Project	Design	
95% PS&E Internal Review	Project	Design	
Final Estimate	Project	Design	
Solicitation Package	Project	Acquisitions	
Amendments	Estimate	Acquisitions	Each amendment should be stored as an estimate milestone
Bid Opening/Offer Closed	Project	Acquisitions	Negotiated Procurement Included
Negotiation Objective Established/Amendment	Project	Acquisitions	Government Estimate is normally adjusted at this point. Schedule could be revised.
Revised Proposals Received	Project	Acquisitions	Schedule could be revised based on results of negotiations.
Bids Accepted	Project	Acquisitions	
Award	Project	Acquisitions	For competitive negotiated, the ability to remove unsuccessful offer information (Name and pricing) needs to remain. (FAR 15.506(e))
Zero Estimate	Project	Construction	
CSTATUS-Active	Project	Construction	
CSTATUS-Completed	Project	Construction	
Progress Estimate	Estimate	Construction	Each progress estimate should be stored as an estimate milestone
CSTATUS-Disputed	Project	Construction	
CSTATUS-Finaled	Project	Construction	

C1.10 Bid Schedules and Bid Schedule Options

A bid schedule is a list of all pay items in the contract to be completed by prospective bidders with their offered prices for the highway project work expressed in the plans and specifications that describe the articles, works and services required to complete the work. The bid schedule is prepared from the pay items established in the Engineer's Estimate for the highway project.

Highway projects may offer single or multiple bid schedules for bidding. The purpose for offering multiple bid schedules and/or optional bid schedules is to provide the Government

maximum flexibility in completing the highway project with available funding. Highway projects may offer one bid schedule; base plus other schedules (A+B); base or other schedules (A or B); and base plus optional bid schedule(s) (Option A, Option B, etc.). If complete funding is in place at the time of award, the base bid schedule and option bid schedule(s) will be exercised at that time. If the funding for the option bid schedule(s) is received after award of the base bid schedule the Government has the right to exercise (i.e. award) the option bid schedule(s) at the unit prices bid within a time period defined in the contract. Provide for 25 schedules and/or options per highway project.

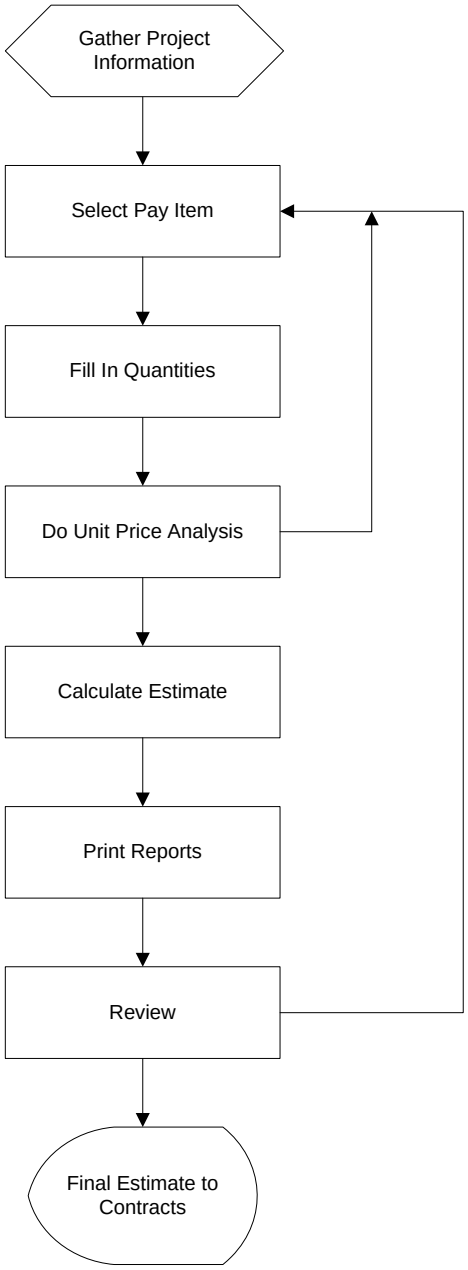
Typically, multiple bid schedules and base bid schedule with option bid schedule(s) are offered for the same project, but there are times that two projects may be joined together into one solicitation through this method. During the Design component phase the schedules are maintained separately so that they can quickly be combined or separated as needed. Once the project has moved into the Acquisition and Construction component phases the decision has usually been established to combine the schedules and/or options for Government convenience. At this time the schedules are linked, and used together. This process is defined later in the Acquisitions and Construction components. Provide the capability to combine, delete, or re-order projects, schedules and options.

C1.11 EEBACS Main Access

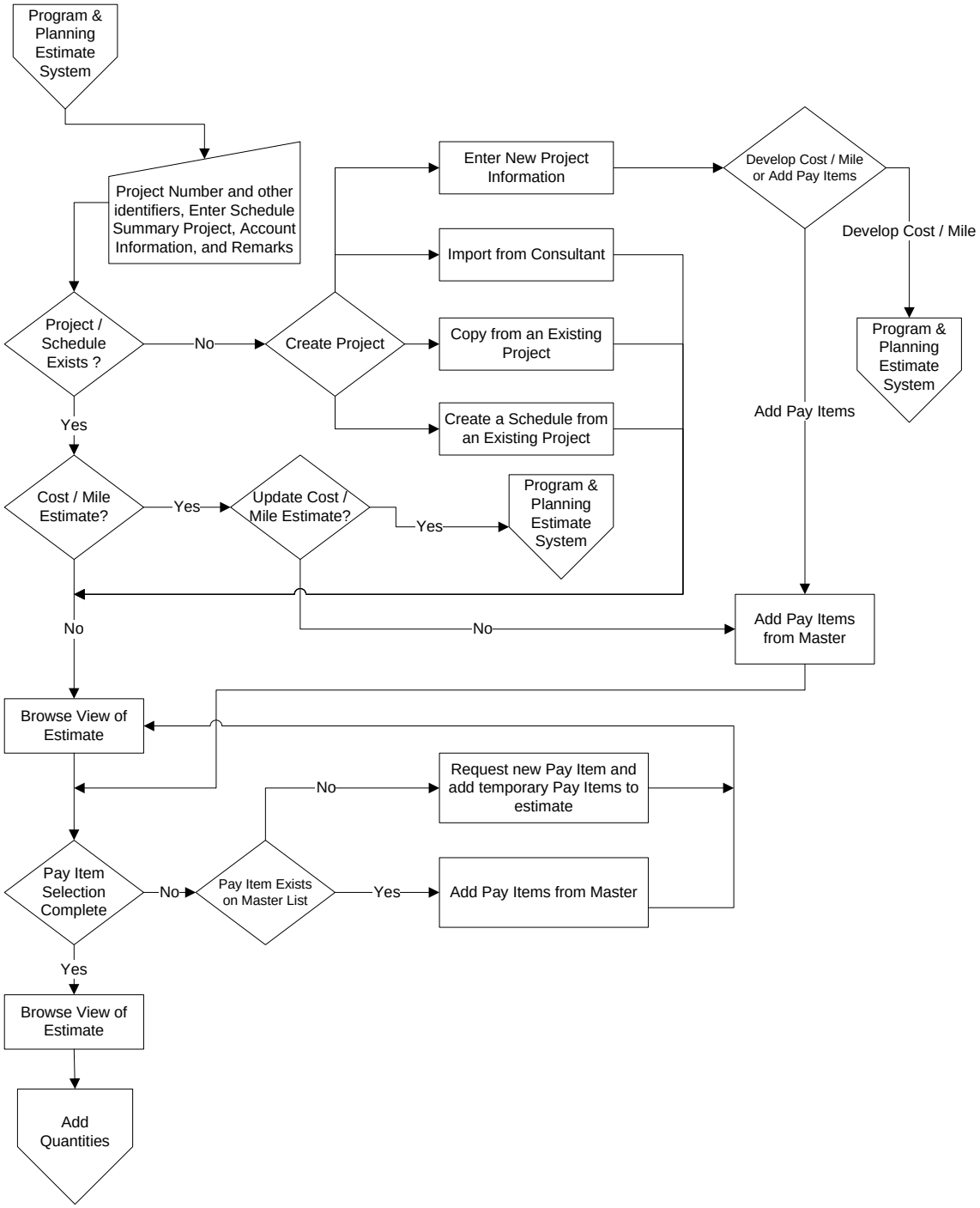
Provide a view to serve as the main access portal to the EEBACS. Provide access to all EEBACS components from this view. Access must comply with the security and access requirements set forth in the contract. Provide the EEBACS Main Access view for both WEB access and the standalone access required in the Construction component.

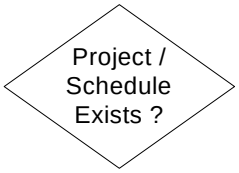
Section C2. — DESIGN COMPONENT

Design Figure 1
Design Estimate Overview



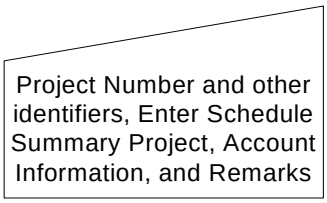
Design Figure 2
Create Project/Add Pay Items





C2.1 Project Selection. Provide a view that lists Projects that are currently stored within the EEBACS for the user to select. Provide a means (toggle switch) to show only projects that are with the Design Component stage of progress (See C1.9 Project Milestone). The project pick list should include: Project Number, Project Name, Schedule Letter, State, Project Milestone, Estimate (Milestone), and Milestone Date. Provide the capability for the user to select the Project from the list to open. Provide the ability for the user to select which Design interface to open for the project selected: Cost / Mile Based Estimate, Pay Item Based Estimate, Project Information, Copy Project From Existing Project, ore Create Schedule from Existing Project. o Provide the capability to create a new project.

Refer to Standard Requirements for Database Views Appendix for Sort, Filter and Find



C2.1.1 Project Information View (New Project/Existing Project Modify Data). Provide a view(s) to input/modify the following data:

- ***Federal Lands Division***
- ***Schedule Type (pick list)***
- ***Schedule Letter (pick list)***
- ***FP Version (pick list)***
- ***Project Number***
- ***Project Name***
- ***Units (pick list)***
- ***State(s)***
- ***County(s)***
- ***Project Milestone***
- ***Estimate Milestone***
- ***Project Milestone Date***
- ***Estimate Milestone Date***
- ***Density (pick list)***

- ***Terrain (pick list)***
- ***Construction Type (pick list)***
- ***Project Description***
- ***Project Termini***
- ***Lat/Long Begin of Project***
- ***Lat/Long End of Project***
- ***GIS Route***
- ***GIS Milepost Start***
- ***GIS Milepost End***
- ***Project Manager (PM)***
- ***Highway Design Manager (HDM)***
- ***Construction Operation Engineer (COE)***
- ***Partner Agency(pick list)***
- ***Funding Source(s) (pick list)***
- ***Package Number (FLMA Number)***
- ***Account Numbers (PE)***
- ***Account Numbers (CONSTR)***
- ***Project Length (Mile/km)***
- ***Lanes Miles***
- ***Bridge(s)***
- ***Bridge Identification(s)***
- ***Bridge Construction Type (pick list)***
- ***Bridge size***
- ***Design CPM Days***
- ***Design Remarks***

Provide the capability to access any Design Interface, such as Cost / Mile Based Estimate, Pay Item Based Estimate, Create a New Estimate, Copy Existing Project, Schedule from Existing Project, Browse View, Edit Single Item View, or back to Project Selection View.

Copy from an Existing Project

C2.1.2 Project Information Input (Copy Existing Input). From the Project Selection View described in C2.1 provide the capability to select a project/schedule to copy to a new project. Additionally, provide the capability to choose the project milestone to copy data from. Provide a view to select data fields from the selected project to the new project which populates the new project with those records.

Provide the capability to access any Design Interface, such as, Pay Item Based Estimate, Browse View or Project Selection View.

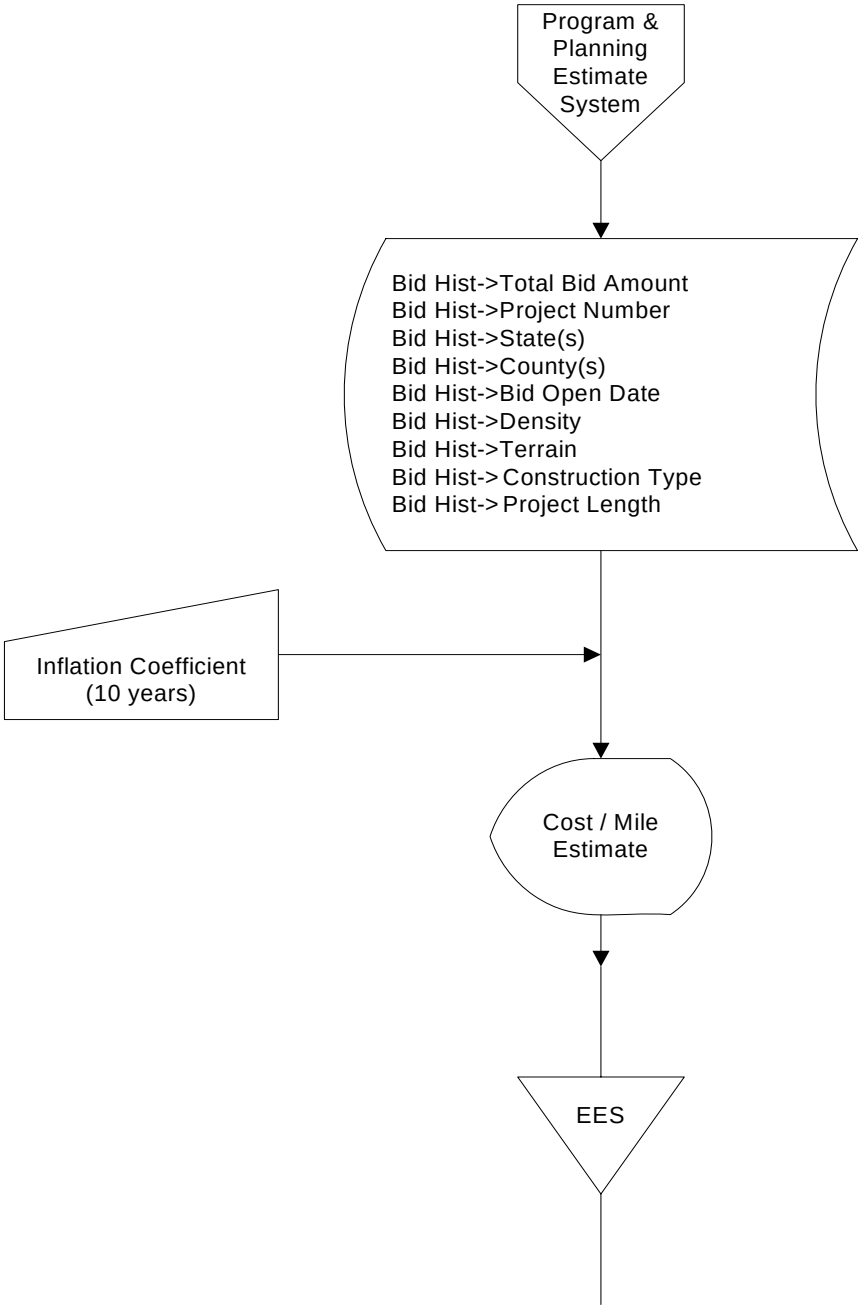
Create a Schedule from an Existing Project

C2.1.3 Project Information Input (Create a Schedule Input). From the Project Selection View described in C2.1 provide the capability to select a project/schedule to copy to a schedule. Additionally, provide the capability to choose the project milestone to copy data from. Provide a view to select data fields from the selected project to the new project schedule which populates the new project schedule with those records.

Provide the capability to access any Design Interface, such as, Pay Item Based Estimate, Browse View or Project Selection View.

Design Figure 3

Cost Per Mile Estimate



Develop Cost
Per Mile Estimate

C2.2 Cost per Mile Estimate. Provide a browse (Spreadsheet) view displaying the following data from bid history:

- Project Number
- Project Name
- State(s)
- Bid Date
- Density
- Terrain
- Construction Type
- Project Length
- Inflation Factor
- Total Bid Amount
- Project Cost Per Mile

Project Cost Per Mile = Total Bid Amount divided by Project Length
Show up to 5 lowest bidders.
Refer to Standard Requirements for Database Views Appendix for Sort, Filter and Find

Provide an inflation toggle that would apply inflation factors to the Project Cost Per Mile. Perform Unit Price Analysis process (picking costs interactively) for the Project Cost Per Mile stored in the Bid History; see Unit Price Analysis, Figure design 5

Add Pay Items
From Master

C2.3 Add Pay Items to Estimate from Master Item List. Provide a view of the Master Pay Item List showing the following fields:

- Pay Item Number
- Pay Item Description
- Pay Unit
- Incentive

Provide the capability to select pay items for the project to add to the estimate from the Master Item List. Provide the ability to add items individually or with multiple selections.. Provide the ability to select the same pay item multiple times.

Refer to Standard Requirements for Database Views Appendix for Sort, Filter and Find for the filtering and sorting of the Master Pay Item List of items.

Refer to the Data Dictionary Appendix to see existing Item Master File for reference.

Provide the ability to add a Supplemental Pay Item Description to the item description. The user should not be able to modify the Pay Item Description that comes in from the Master Pay Item List. Display Pay Item Descriptions and Supplemental Pay Item Descriptions in all views and reports that contain a pay item description.

Add Temporary Pay Items to Estimate

C2.3.1 Add Temporary Pay Item. In the Add Pay Items to Estimate from Master Item Table process when no pay item exists that satisfies the user's requirements, provide the capability to add a temporary pay item (first five characters). Provide a view where the user will be able to input the Pay Item Section number(first five characters), Pay Item Description, and Pay Unit.

TEMPORARY PAY ITEM		
ITEM NO.	DESCRIPTION	UNIT
25102-TEMP	Placed riprap, class 9	t
62201-TEMP	Truck, highway, dump body, rear, dual wheels, 9.4 m3 minimum capacity	hour

The temporary pay item will be marked in the project's estimate database as a temporary pay item.

Browse View of Estimate

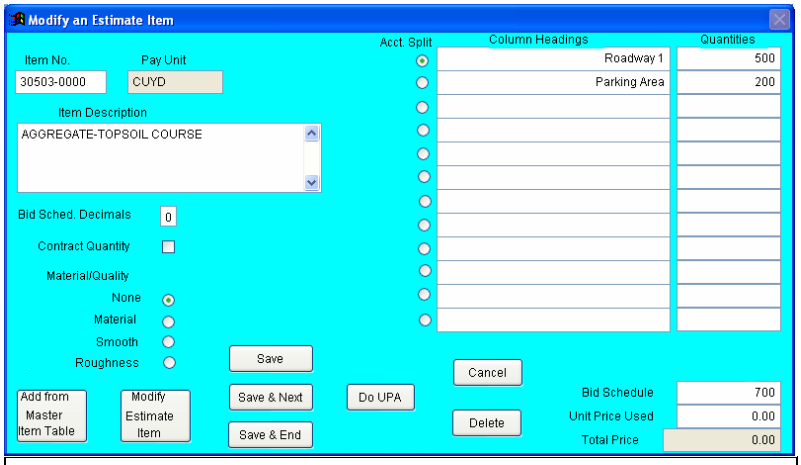
C2.4 Browse View of Pay Items. Provide a browse(spreadsheet) view showing the following fields:

- Pay Item Number
- Pay Item Description
- Pay Unit
- Quantities

Show view with bullets shown above as a minimum, provide the ability to add fields (stored in the project estimate list) to view dynamically. Provide the capability to edit data (editable data only). Editing data can be accomplished thru direct edits or where needed through supplemental views. Provide the capability to switch to an Edit Single Item View or Browse View by user selection. Provide the ability for both the Browse View and the Edit Single Pay Item View to access all Design interfaces.

C2.4.1 Edit Single Pay Item View. This view shows the following fields:

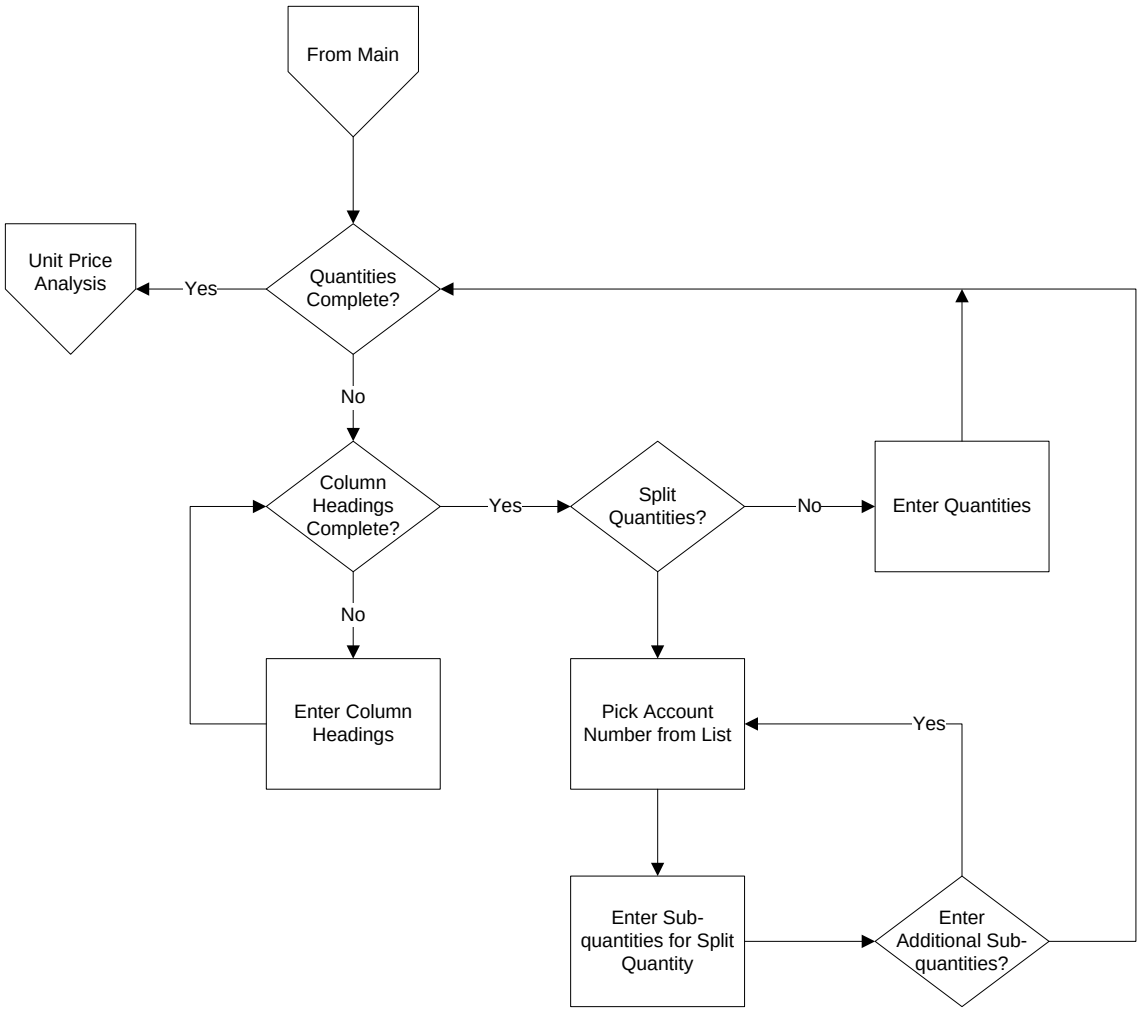
- Pay Item Number
- Pay Item Description
- Pay Unit
- Bid Decimal
- Contract Quantity
- Incentive type
  a. None
  b. Material
  c. Roughness/material
  d. Smoothness/material
- Column Heading
- Quantities
- Bid Schedule Quantity
- Unit Price
- Total Price
- Pay Item Remarks



EDIT SINGLE PAY ITEM VIEW. Sample for information only, not the desired final product.
Pay Item Remarks field needs to be a minimum of 250 characters.

Design Figure 4

Add Quantities



Enter Column Headings

Column Headings are used to breakdown quantities for each pay item for specific work areas.

C2.5 Add Column Headings. Provide, in the Edit Single Pay Item View (example: C2.4.1 Edit Single Pay Item View), an input area to define the column heading name and the associated quantity. Provide for 20 column headings that are scrollable. Provide the same ability to add column headings and associated quantity in the Browse View

Enter Quantities

C2.5.1 Enter Quantities. The user enters quantities into the quantity fields under the appropriate column heading for each pay item. The view sums the entered quantities and displays the total in the Bid Schedule.

Account Number Pick list

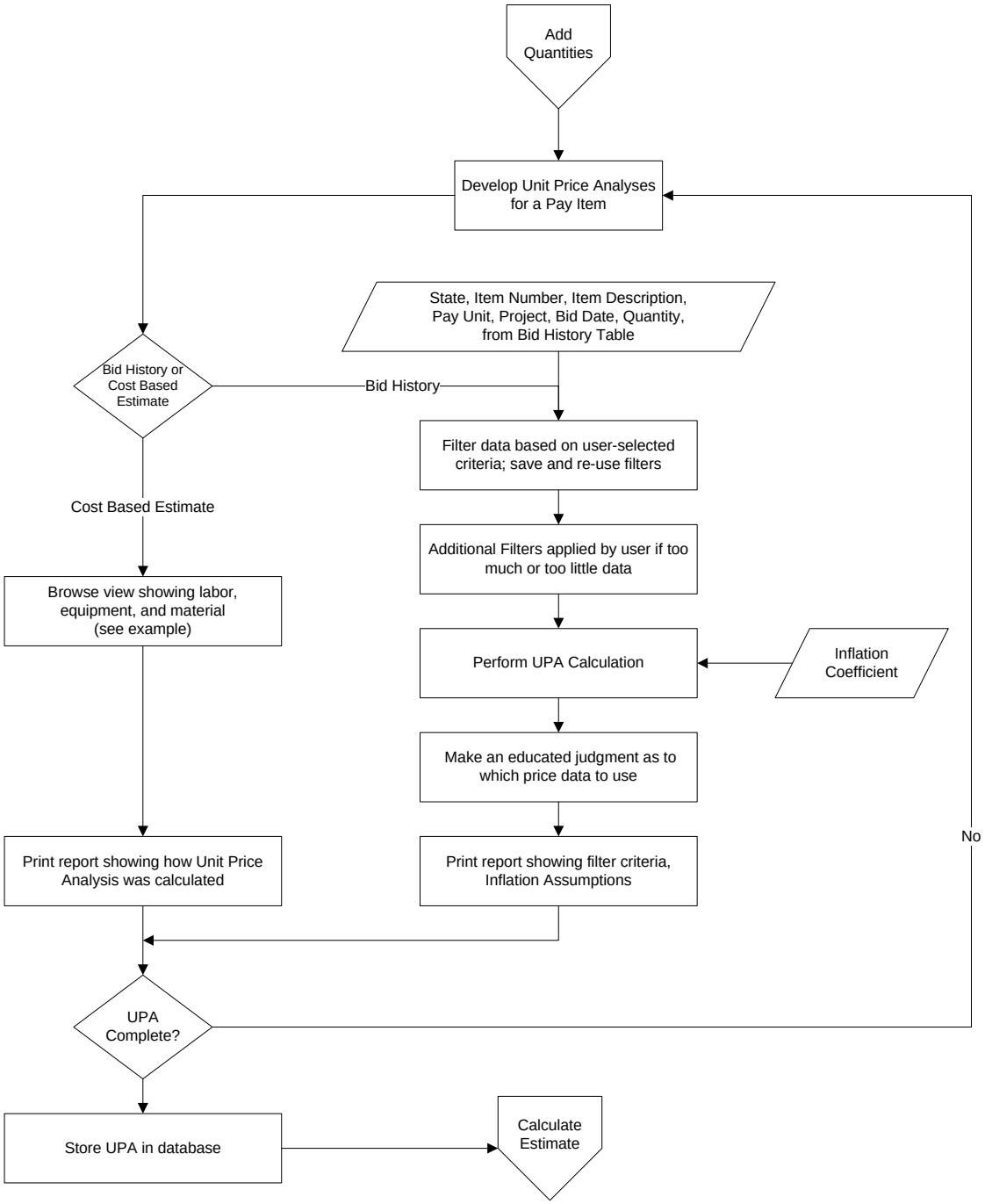
Assigning quantities to multiple account numbers is an additional method used to designate pay item quantities for specific work areas.

C2.5.2 Assign Account Number(s). Provide the option to assign a column heading's quantity or portion of quantities to multiple accounts stored in the project information.

Provide the ability to split quantities into various accounts by either assigning quantities or determining percentages to be applied to the account as defined by the user.

If only a single account is stored in the project information, the Account Number Splits option would not be available and all quantities would be assigned to the single account. Provide this option in both the Edit Single Pay Item View and the Browse View.

Design Figure 5
Unit Price Analysis For Each Pay Item



C2.6 Develop Unit Prices.

The Unit Price Analysis (UPA) process is a method used to derive a unit price for an pay item based on historical bids, or from costs developed from material, equipment and labor costs (cost based unit price analysis).

Develop Unit Price Analysis for a Pay Item

C2.6.1 Develop Bid History Filter. Provide a view to select the initial filter for the bid history list (Example: Select which States to display, the Bid Date range of dates to display, what range of quantity data to display) . The initial filter lists data from the bid history list for each item.

. The user sets the search default filter for the initial history query, which will be saved for the project and used for each items initial search (until the default changed by the user). Additional filtering can be done once the initial query has returned data and should work similar to Standard Requirements for Database Views for Sort, Filter and Find.

Provide ability to pick from and sort on all of the fields in the Bid History database.

Refer to the Data Dictionary Appendix to see existing Bid History File.

After the initial filtering process the UPA process results show the bulleted list below, with the ability to add fields from the bid history to the view dynamically. The view should be scrollable in all directions.

- Pay Item Number
- Pay Item Description
- Pay Unit
- Bid Date
- State
- Project Number
- Project Name
- Quantity
- 5 Lowest Bidders Prices
- Total Estimate Amount
- Terrain
- Construction Type
- Density

C2.6.2 Selecting Bid Prices for Current Estimate. From the filtered bid history view provide a method to manually select bid history unit prices listed in the view. Provide ability to select and deselect prices. Highlight prices the user selects. To deselect the user selects the price a second time (toggle).
Display the following in the view:

- Number of Bids selected
- Average of bids selected
- Median of bids selected
- High of bids selected
- Low of bids selected

Provide an input field for Unit Price Used for this Pay Item and automatically fill with the value calculated from the Average of bids selected. Provide the ability to overwrite that value with a user entered value. (Example: the user may want a rounded value).

Provide the following save/print options.

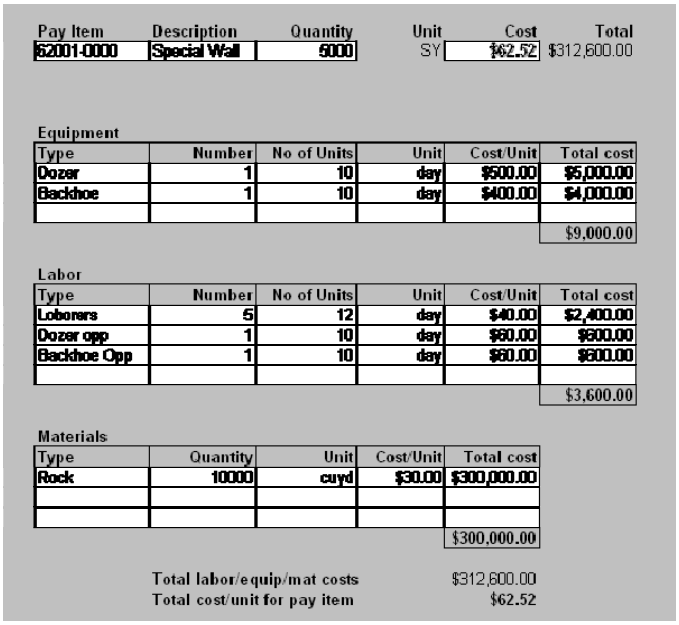
- Get the next item and run UPA with initial filter, do not save the unit price value to the estimate, do not print or save the UPA data.
- Print (print UPA report for this item), do not save the unit price value, do not save the UPA data, go to next item
- Use (store value as Unit Price in estimate) and Print (print UPA report for this item), do not save UPA data, go to next item
- Use (store value as Unit Price in estimate) and Save UPA data, go to next item
- End UPA Function and return to BROWSE View or Edit single Pay Item View.

See Unit Price Analysis Backup Data Report in Reports Appendix

C2.6.3 Cost Based Unit Price Analysis. Provide a view that will be a browse(spreadsheet) type view to select a pay item to do cost based unit price analysis.
Show the following in the view:

- Pay Item Number
- Pay Item Description
- Pay Unit
- Quantity

For the pay item selected to perform the UPA process for.



Pay Item	Description	Quantity	Unit	Cost	Total
62001-0000	Special Wall	5000	SY	$62.52	$312,600.00

Equipment

Type	Number	No of Units	Unit	Cost/Unit	Total cost
Dozer	1	10	day	$500.00	$5,000.00
Backhoe	1	10	day	$400.00	$4,000.00
					$9,000.00

Labor

Type	Number	No of Units	Unit	Cost/Unit	Total cost
Laborers	5	12	day	$40.00	$2,400.00
Dozer opp	1	10	day	$60.00	$600.00
Backhoe Opp	1	10	day	$60.00	$600.00
					$3,600.00

Materials

Type	Quantity	Unit	Cost/Unit	Total cost
Rock	10000	cuyd	$30.00	$300,000.00
				$300,000.00

Total labor/equip/mat costs	$312,600.00
Total cost/unit for pay item	$62.52

COST BASED UNIT PRICE ANALYSIS EQUIPMENT/LABOR/MATERIALS VIEW. Sample for information only, not the desired final product.

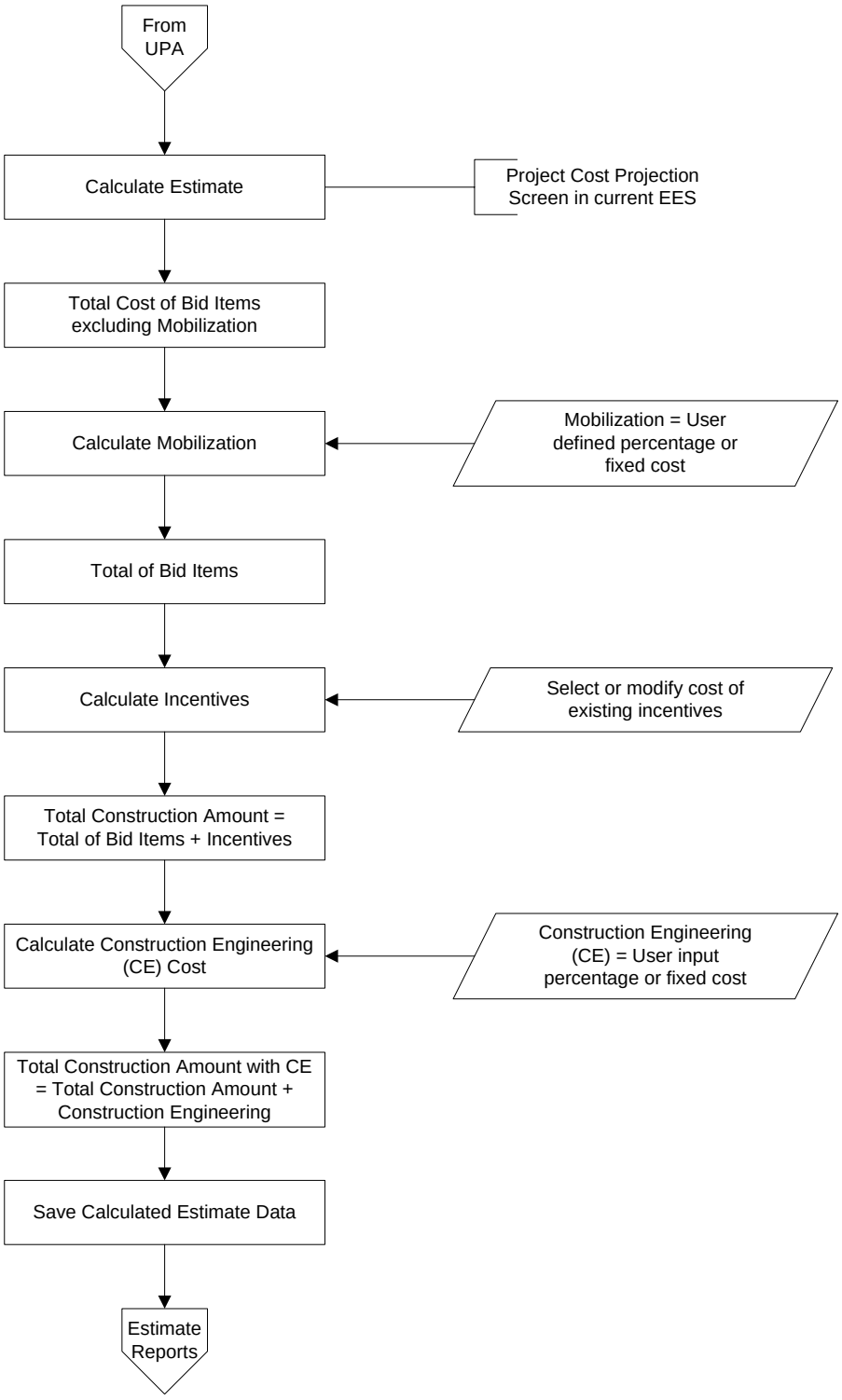
Once all of the labor, equipment and material data is entered a total price for the work is generated. The unit cost for the pay item is determined by dividing the total cost by the quantity.

Place the Total cost for pay item that is calculated into the Unit Price field but allow the user to overwrite the field with a user input

Provide the following save/print options.

- Print the UPA, and save the UPA data, ask to do another pay item
- Save the UPA data only, ask to do another pay item
- Print the UPA data only, ask to do another pay item
- Cancel and ask to do another pay item
- End the process and go back to the Browse view or the Edit Single Pay Item View.

Design Figure 6
Calculate Estimate



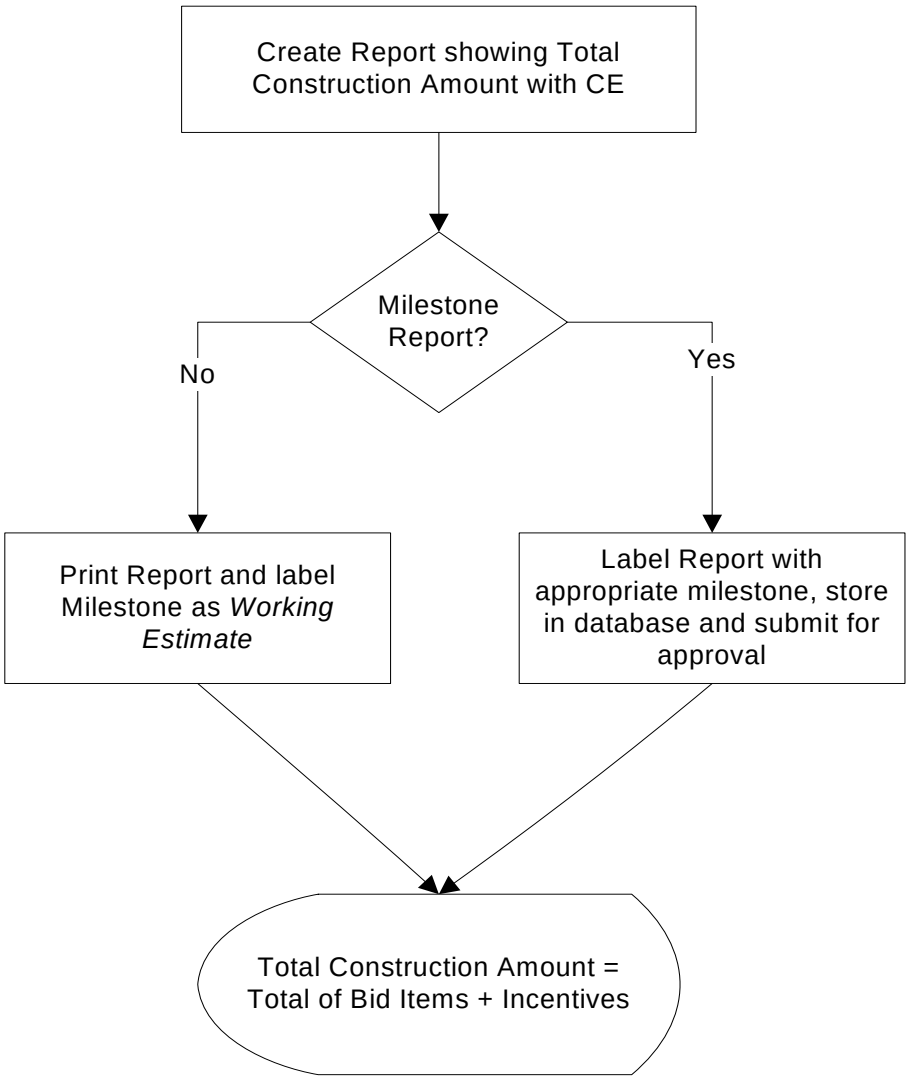
CALCULATE ESTIMATE

C2.7. Compute Construction Total Costs. Provide a view to compute total construction cost, and include mobilization costs, incentive costs, and construction engineering costs. Include the following in the view:

- Show the total ***cost of Bid Items*** (excluding *Mobilization*) needs to be calculated and displayed.
- Show the ***Mobilization Item price*** as a calculation of a percent (as a default or entered by the user) of the total ***cost of Bid Items,*** or by providing the value via key-in by the user that will adjust the percentage to agree. The value will then be placed in the estimate for pay item 15101-0000.
- Display the ***Total of Bid Items*** cost for the project as the sum of the total ***cost of Bid Items*** (excluding *Mobilization*) and the ***Mobilization*** cost. Allow for user key-in of the ***Total of Bid Items*** cost value and adjust the ***Mobilization*** percent and value accordingly.
- All percentage and quantity values defined are changeable by editing.
- Provide for input of contract incentives and their values.
    - Quality Material Incentive is added automatically only if Quality material items are contained in the estimate and the value is given as a user provided % (a default that can be changed by user) of the cost of those Items indicated. Provide an option to remove this incentive.
    - Smoothness incentive is added automatically only if Smoothness items are contained in the estimate and the value is given as a user provided percentage (a default that can be changed by user) of the cost of those Items indicated. Provide an option to remove this incentive.
    - Roughness incentive is added automatically only if Roughness items are contained in the estimate and the value is given as a user provided percentage (a default that can be changed by user) of the cost of those Items indicated. Provide an option to remove this incentive.
    - Add other incentives and values (as many as 10), the project requires via user key-in.
- Provide for Account Splits by adding the account numbers and the total amount charged to each account.
- Show the ***Total Construct Amount*** value for the project as the sum of ***Total of Bid Items*** and the ***Incentives***.
- Show the ***Construction Engineering*** value as a calculation of a percentage (as entered by the user) of the ***Total of Bid Items*** cost, or by providing the value via key-in by the user that will adjust the percentage to agree.
- Display the ***Total Construction Amount with CE*** for the project as the sum of the ***Total of Bid Items*** cost and the ***Construction Engineering*** value and ***Incentives***. Allow for user key-in of the ***Total Construction Amount with CE*** value and adjust the ***Construction Engineering*** percent and value accordingly.

See Total Construction Cost Report in Reports Appendix.

Design Figure 7
Reports



ENGINEER'S ESTIMATE REPORTS

C2.8 Estimate Summary report has the following information.

- Schedule Letter
- Project No.
- Project Name
- Date (date of report)
- State
- County
- Project Milestone
- Estimate (Milestone)
- Milestone Date
- Partner Agency
- Construction Type
- Account Numbers (CONSTR)
- Project Termini
- Project Length
- Remarks

C2.8.1 Estimate Summary Report also shows the Total Amount of Bid Items, all the incentives and Amounts, Total Construction Amount, Construction Engineering Amount, and Total Construction Amount with CE.

See Combined Summary Report (existing) in Appendix Reports.

C2.8.2 Engineer's Estimate Item Report contains the project Items along with the Item no., Quantity, Unit, Unit Price, and Amount. When the project has split accounts show the Account numbers along with the Quantity on the item.

- Schedule
- Project No.
- Project Name
- Date (date of report)
- Account Numbers (CONSTR) (if multiple account numbers are assigned)

See Engineer's Estimate Item Report (existing) in Reports Appendix.

The SUMMARY OF QUANTITIES Report.

This report is a listing of the project Items including:

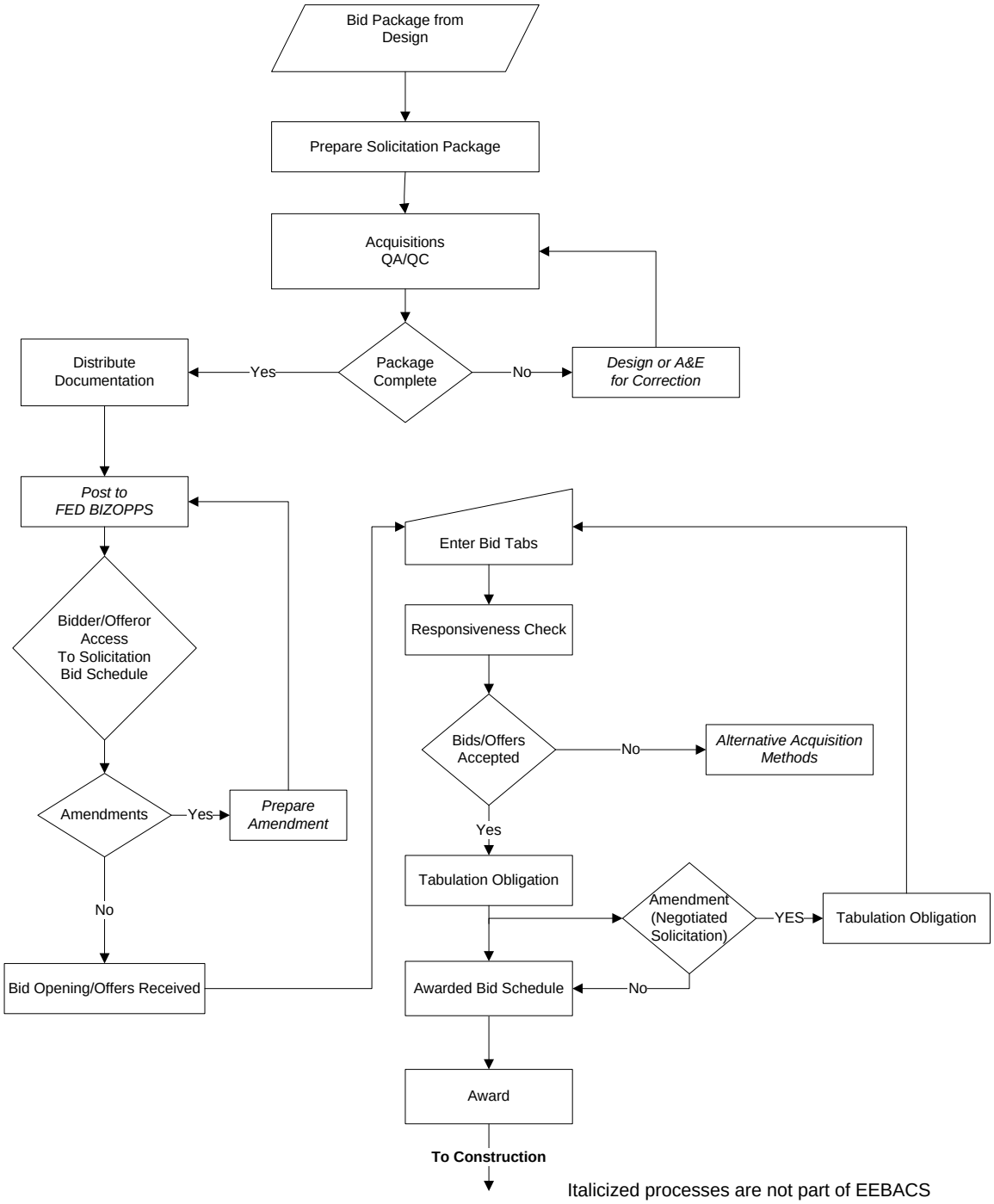
- Pay Item Number
- Pay Item Description
- Pay Unit
- Column Headings
- Quantities
- Bid Schedule Quantity
- Pay Item Remarks.

Provide the option to print this report on either 81/2x11 or 11x17 0utput to be selectable by the user.

See Summary of Quantities Report (existing) in Reports Appendix.

Section C3. — ACQUISITIONS COMPONENT

Acquisitions Figure 1
Acquisitions Process Overview



Italicized processes are not part of EEBACS

C3.1 Project Selection View. *Provide a view that lists Projects currently stored within the EEBACS for the user to select. Provide a means (toggle switch) to show only projects that are ready for Acquisitions. The selection list must include (Project Number, Project Name, Schedule Letter, State, Milestone, Milestone Date. The user would pick the project to open from a list. Provide the ability for the user to select which Acquisitions interface to open for the selected project: Project Information, Bid Schedule, Obligation Tabulation, etc. The selection list would follow requirements in the Standard Requirements for Database Views Appendix for sort, filter, and find.*
Provide the capability for the user to send the project back to Design (resetting the Project Milestone backward).

C3.2 Project Information View (Existing Project Modify Data). Provide a view(s) to input/modify the following data under the Acquisition Information tab:

- ***Contract Number***
- ***Solicitation Number***
- ***Solicitation Type (pick list)***
- ***Bid Open Date/Offer Due Date***
- ***Bid Open Location/Offer Received Location***
- ***Bid Open Officer (N/A for Negotiated procurements)***
- ***Bid Guarantee Type***
- ***Contracting Officer***
- ***Award Date***
- ***Contractor Name***
- ***Contracting Method(pick list)***
- ***Contractor Address***
- ***Contractor Phone (multiple)***
- ***Contractor EMAIL (multiple)***
- ***Contractor DUNS number***
- ***Acquisition Remarks (free form notes)***

C3.3.1 Bid Package from Design. *Once the Design Section has completed their work, the project is forwarded to Acquisitions for further processing. Data for the Engineer's Estimate has been entered into the system. The electronic version is only accessible to the Acquisition Section unless released back to Design for correction or modification.*

Limit access to project data to the Acquisition Section. This requirement will begin upon delivery from Design until delivery to Construction (See Subsection C1.9).
Provide the ability to perform all levels of input and functions as previously described in the Design Component.

Prepare Solicitation Package

C3.3.2 Prepare Solicitation Package. *User needs to generate a current Engineer's Estimate (EE), Solicitation Bid Schedule, and Summary of Quantities reports. Each report is visually checked for completeness. These reports are cross-checked to ensure the project number, project name, pay item number, pay item description, pay unit, quantity, total, incentive type(s) and incentive amount are correct.*

User needs to be able to add additional project data to the database that is developed during the Acquisition process. User must also be able to revise previously entered project data if in error.

Provide the ability to include solicitation number, solicitation method, competition type, set aside type, and selection process. The solicitation number is an alpha numeric designator (example DTFH70-05-R-00009) assigned to the package. The solicitation method should be selected from a pull-down menu with the following multiple choices:

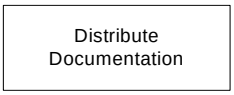
- Competition Type:
  - Full and Open
  - Set-Aside
    - HUB Zone
    - 8(a)
    - Service Disabled Veteran owned Business
    - User input type
    - Not Applicable
  - Sole Source
  - MATOC Task Order
  - User input type
- Selection Process:
  - Sealed Bid
  - Trade - off
  - Low Price Technically Acceptable
  - User input type

Provide the ability to generate a Solicitation Bid Schedule report. The report should be able to be exported to MS Excel. See report appendix for example of existing report.

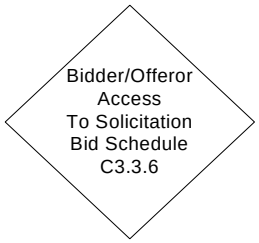
C3.3.3 Acquisition's Quality Control/Assurance. *Once the solicitation package has been created, the package is sent to responsible individuals for concurrence or approval. Any errors or omission are revised by Acquisition or Design personnel. Until all deficiencies are corrected or explained, the package does not move forward.*

Provide the ability to generate an updated Solicitation Bid Schedule report. User will generate a Bid Opening Disclosure of Engineer's Estimate (BODEE) when necessary (not required for negotiated procurements). See report requirements in Appendix.

C3.3.4 Package Complete. O*nce the solicitation package has been reviewed and approved, it is deemed complete and ready for advertisement or negotiation.*



C3.3.5 Distribute Documentation. *Upon completion of the solicitation package, the material is printed and readied for distribution. Material is available in both paper and electronic medium.*

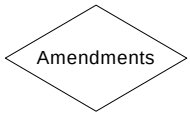


C3.3.6 Bidder/Offeror Access to Solicitation Bid Schedule. *The Bidder/Offeror is given access to an electronic version of the solicitation bid schedule in PDF form. The Bidder/Offeror can then use the program to enter name, contractor type, address, phone, email, Duns number, unit prices and total bid amount. The data can then be submitted on a CD, sent e-mail or web access with documents at the Bid Opening/ final negotiations. This should not be considered "electronic bid submission", but data for importation into the EEBACS.*

Provide capability to allow prospective Bidders/Offeror to enter data electronically (this is not electronic bid submission). Data must be encrypted (See C.6.7.1). Provide a view to input contractor name, contractor address, contractor phone, contractor email, and contractor Duns number. Provide a menu for selection of contractor type with the following choices, allow for multiple choices:

- Large business
- Small business
- HUB Zone small business
- Small disadvantaged business
- Women-owned small business
- Veteran-owned small business
- Service-disabled veteran-owned small business
- 8(a) firm
- User input

Provide a view patterned after the Solicitation Bid Schedule where unit price, the amount bid for lump sum, or fixed rate unit bid price items of work can be entered. Provide the ability to calculate the Amount Bid for each Pay Item and the Total bid amount.

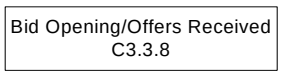


C3.3.7 Amendments. *A solicitation often needs to be amended and requires a change in the entered data (Administrative amendments require no change to the data). Projects may experience numerous amendments. Revisions need to be identified and correlated to the appropriate amendment number. Project data and pay items may be modified, added, or deleted. Once approved, the data and reports must be stored unique of other data (each amendment is a milestone).*

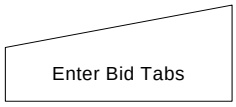
The Engineer's Estimate, Solicitation Bid Schedule, Summary of Quantities and BODEE reports are revised. A SF30 Amendment of Solicitation/ Modification of Contract is generated with appropriate reports attached (revised Solicitation Bid Schedule and Summary of Quantities). A check is made to ensure funds are obligated. The Amendment is then either posted on FedBizOpps or forwarded to the proposed Contractor.

Provide a method to assign amendment numbers to changes in pay items. Changes due to the amendment will need to be identified numerically in the Engineer's Estimate, Solicitation Bid Schedule, and Summary of Quantities reports. The amendment number will be alpha-numeric and will be entered by the user. An "Amendment" column with the appropriate amendment number adjacent to the pay item number affected by the change will be required. Provide a comment field to allow the user to input a brief description of the amendment.

Upon completion of manipulations, revise EE, Solicitation Bid Schedule, Amendment, Summary of Quantities and Bid Opening Disclosure of the Engineer's Estimate (BODEE) reports as necessary.



C3.3.8 Bid Opening/Offers received. *At the end of the Advertisement period, bids/offers are delivered to either the FLH or FHWA Federal Aid Division office. There may be multiple Bidders/Offerors for a solicitation.*

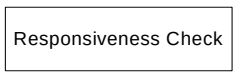


C3.3.9 Enter Bid Tabs. *Bids/offers are received electronically/paper and are entered into the system. Bids/offers may be from one to multiple bidders. Errors are identified and Bidders are asked to verify their bids. Bids/offers may be corrected/revised, withdrawn, or rejected.*

Provide a method for the user to input bid opening location, name of Bid Opening Officer, bid opening date/offer due date, Contracting Officer, and date the bid tab was signed for the solicitation.

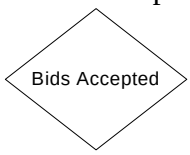
Provide at least 1 electronic method and 1 manual method for inputting the following data: contractor name, contractor address, contractor phone, contractor e-mail, contractor DUNS number, unit bid price for each pay item, amount bid for each pay item, and total bid amount. Provide the capability for the user to select which method to use. Also, provide a method to check against a calculated total amount for each bid item and against the total amount bid for each bidder. Errors are shown on screen as data is entered and by report.
Provide the ability to generate the Bid Item Check Pass, Bid Total Check Pass and Tabulation of Bids Reports. The Bid Item Check Pass and the Bid Total Check Pass apply to data entered by the User, rather than data received electronically from the bidder/offeror. The Bid Item Check Pass compares computed extensions for each bid item with the bidder's/offeror's extension, and notes discrepancies. The Bid Total Check Pass compares computed total bid amount with the bidder's/offeror's total bid amount, and notes discrepancies.
When competitive and other than sealed bid is selected (see C3.3.2) the following footer should be added to the report " Source Selection Information – See FAR 2.101 and 3.104". Provide the ability to easily change/edit the input footer information (if rules of FAR reference changes). Provide the ability to completely delete a bidder's/offeror's data from a project file.

When errors in all bids have been resolved, provide the ability to send data to the Bid History database for future estimating purposes.



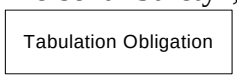
C3.3.10 Responsiveness Check. Once entered into the system, bids are checked for accuracy. Errors are identified and Bidders/offerors are asked to verify their bids. Bids/offers may be corrected/revised, withdrawn, or rejected.

Provide a method to allow the user to indicate whether the bidder was responsive or non-responsive with a data field to input the reason.
Provide the capability to analyze bid information. Provide tools and reporting capability to identify individual bids that are a user selected percentage above or below the engineer's estimate price for bid items. Provide reporting capability to list items with bids identified that meet the user selected criteria. Provide the capability to do the same comparisons and reporting capability between bidder's bids. Allow for comparisons to historical bid data with current bid data with reporting capability.



C3.3.11 Bid/Offer Accepted.

Provide a method to allow the user to indicate the bid guarantee type by selecting "Bond", "Personal Surety", or user defined type.



C3.3.12 Tabulation Obligation. *Successful Bidder for award is selected. Where applicable, incentives are recalculated using bid prices.*

Provide a method to recompute account splits using the bid amounts according to the original splits. Provide a method to recompute incentives. Some incentive amounts are calculated based on bidder's/offeror's bid amounts. Some incentive amounts are brought forward from the engineer's estimate. Allow for values to be overwritten by user.

Provide a method to generate the Obligation Tabulation Report.

C3.3.13 Awarded Bid Schedule. *Prior to contract award, the Acquisition Section develops an awarded bid schedule for the contract. This version is similar to the solicitation version, yet has specific contract data included. The awarded bid schedule is similar to the Solicitation Bid Schedule adding the successful contractor's information: Contractor name (on each page), Unit Bid Price for each item, amount bid for each item and the total bid amount.*

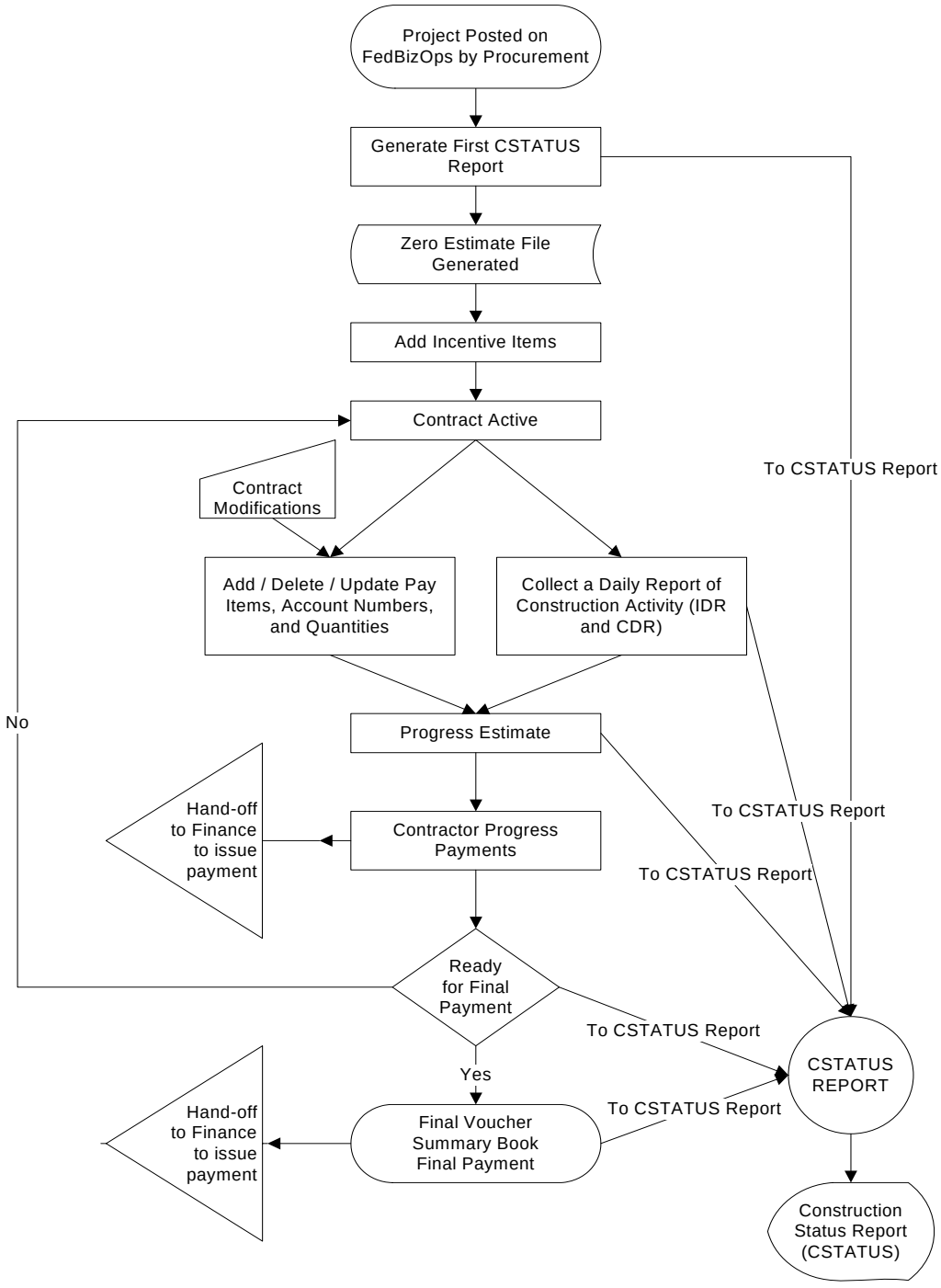
Provide a method to generate the Awarded Bid Schedule Report.

C3.3.14 Award. When the solicitation is awarded, a contract number is assigned.

Provide a method to allow the user to input the Contract Number or Task Order number into system.

Section C4. - Construction Component

Construction Figure 1
Progress Estimate Overview



C4.1 Project Selection. Provide a view that lists Projects that are currently stored within the EEBACS for the user to select. Provide a means (toggle switch) to show only projects that are ready for the Construction component (the project milestone would be set to Solicitation Package or greater for the CSTATUS portion, or Initial Estimate or greater for the other Construction Interfaces – see C1.9 Project Milestones). The project pick list should include (Project Number, Project Name, Schedule Letter, State, Project Milestone, Milestone Date. The user would pick the Project to open. Provide an option for the user to select which Construction interface to open for the project selected: Project Information, CSTATUS, Inspector Daily Reports, Pay Notes, Contract Modifications, Progress Estimate, or Final Voucher (If the user is the contractor, they would only be able to select Project Information, Contractor Daily Reports and Contractor Pay Notes). Provide sort/filter capabilities defined in the S Standard Requirements for Database Views for sort, filter, and find Appendix.

C4.2 Project Information View (Existing Project Modify Data). Provide a view(s) to input/modify the following data for construction:

- ***Project Engineer:*** [pick list]
- ***Project Engineer Address:*** [user input]
- ***Project Engineer Phone(s):*** [user input]
- ***Account Number(s) (CONSTR):*** [pick list]
- ***Account Number(s) (CE/CE-AE):*** [pick list]
- ***Subcontractor Name(s):*** [user input]
- ***Subcontractor Type(s):*** [pick list]
- ***Subcontractor Address(s):*** [user input]
- ***Subcontractor Phone(s):*** [user input]
- ***Notice to Proceed Date:*** [user input]
- ***Original Contract Days:*** [user input or calculated *]
- ***Original Completion Date:*** [user input or calculated *]
- Revised Completion Date (from CSTATUS)
- Estimated Completion Date (from CSTATUS)
- Substantial Completion Date (from Final Voucher)
- Actual Completion Date (from Final Voucher)
- Final Inspection Date (from Final Voucher)
- Final Acceptance Date (from Final Voucher)
- Project Records Rec'd from PE Date (from Final Voucher)
- As-Constructed Plans Submitted Date(from Final Voucher)
- Final Voucher Package to Contractor Date (from Final Voucher)
- Final Voucher Package from Contractor Date (from Final Voucher)
- Final Voucher Paid Date (from Final Voucher)
- FCR Signed Date (from Final Voucher)
- ***Construction Remarks:*** [user input free form text]

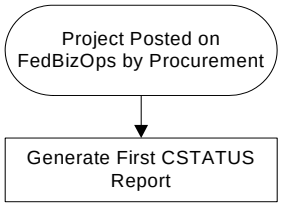
* Provide the ability for the user to select either a Completion Date Contract or a Working Day Contract:

If Completion Date Contract: Original Contract Days = Original Completion Date – Notice to Proceed Date

If Working Day Contract: Original Completion Date = Notice to Proceed Date + Original Contract Days

All other project information items that were entered previously from the Design Component or Acquisitions Component would be viewable from the Project Information interface.

C4.3 Construction Status (CSTATUS).



C4.3.1 Pre-Award CSTATUS. When Acquisitions sets the Project Milestone to SOLICITATION PACKAGE enable the fields for that project to be output to the CSTATUS report (see APPENDIX – REPORTS). Include the following fields:

- Project Number
- Project Name
- Funding Source(s)
- State(s)
- County(s)
- Project Description
- Project Length
- Contract Number
- Construction Operations Engineer (COE)
- Project Manager (PM)
- Highway Design Manager (HDM)

PROJECT MILESTONE: SOLICITATION PACKAGE

C4.3.2 Post-Award Project Milestone/CSTATUS (PRE-AWARDED, AWARDED, ACTIVE, COMPLETED, DISPUTED, TERMINATED OR FINALED). *After the project has been awarded, the Project Milestone should be set to AWARDED by the Acquisitions Section*. All award information collected in the Acquisition Component is now viewable to Construction and the zero estimate file data is ready for processing (see description below). The PROJECT INFORMATION VIEW is accessible to enter other known project information as shown in C4.2.

Once a Notice to Proceed has been issued, the Project Milestone is set to CSTATUS-ACTIVE by the Construction Section.

An example of a Post-Award CSTATUS report, with comments, is in the REPORTS APPENDIX.

Provide view(s) to enter/show the following data for Post-Award CSTATUS for each month.

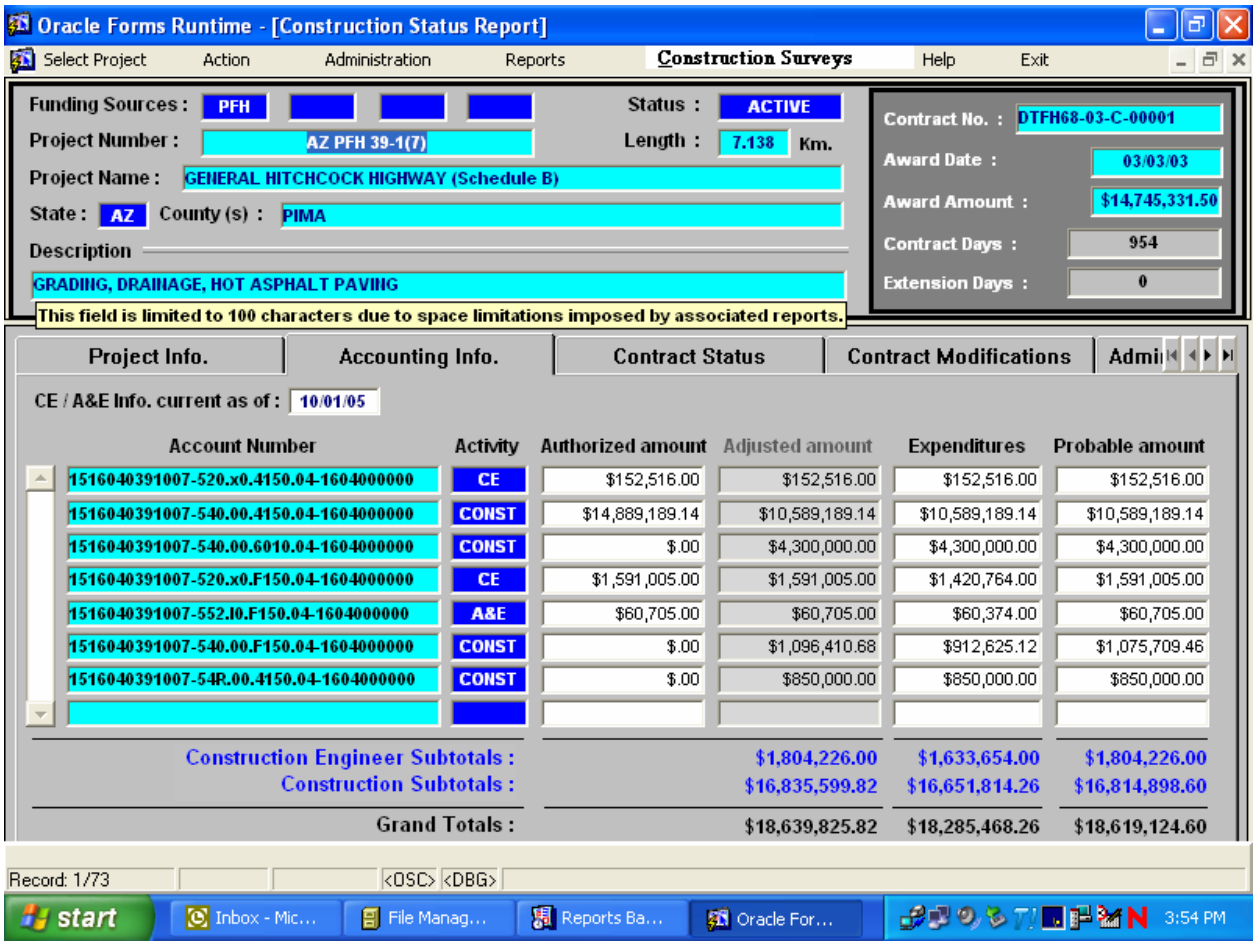
C4.3.2.1 Accounts.

CE/CE-AE Account Types (Allow for multiple accounts)

- ***CE/CE-AE Info Current as of:*** [user input date]
- **CE/CE-AE *Current Authorized Amount(s):*** [user input]
- **CE/CE-AE *Current Account Expenditure(s):*** [user input]
- **CE/CE-AE *Current Probable Amount(s):*** [user input (data from COE)]

CONSTR Account Types (Allow for multiple accounts)

- ***CONSTR Original Authorized Amount(s):*** [user input]
- ***CONSTR Current Authorized Amount(s):*** [calculated: Original Authorized Amount + Net Authorized Change (from Contract Modification)]
- ***CONSTR Current Account Expenditures***: [Total Estimates Paid to Date (from Progress Estimate)]
- ***CONSTR Current Probable(s)***: [Probable Amount (from Progress Estimate)]



Example accounting Table (Example is for Information Only)

Account Chaining: *Multiple construction account numbers may be used for an individual project. These construction accounts have different priority status. In other words, one of the accounts may need to be used prior to another of the accounts.* Provide the ability to prioritize which account should be expended first. Provide that the program allows for the chaining of construction accounts to allow for a progression of payment from different accounts as the funds in the priority accounts are exhausted.

C4.3.2.2 Contract Status. Provide a view for the following:

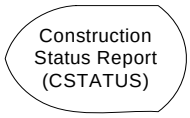
- ***Percent Construction Engineering:*** [calculated: summation of CE/CE-AE Current Account Expenditure(s) divided by CONSTR Current Probable(s)]
- ***Revised Completion Date****:* [calculated: Original Completion Date (from Project Information) + Contract Time Increase/Decrease (from Contract Modification)]
- ***Contract Days (calendar days):*** [calculated: Revised Completion Date – Notice to Proceed Date]
- Actual Completion Date (from Final Voucher)
- Estimated completion date (from Progress Estimate)

- ***Extension days (calendar days):*** [calculated: Revised Completion Date – Original Completion Date]
- Current Days Used (from Progress Estimate)
- Percent Work Completed (from Progress Estimate)
- Percent Time Used (from Progress Estimate)

C4.3.2.3 Subcontractors. Provide a view for the Contractor to input Subcontractor data (as described above in Project Information View). Provide a view for FHWA to be able to add new Subcontractor data and also the ability to edit/update subcontractor data input by the Contractor. As Subcontractor names are added, the Subcontractor/Contractor names should be available for a pick list for the Daily Report of Construction Activity.

- ***Subcontractor Name(s):*** [user input]
- ***Subcontractor Type(s):*** [user input]
- ***Subcontractor Address(s):*** [user input]
- ***Subcontractor Phone(s):*** [user input]
- ***Subcontractor EMAIL(s):*** [user input]
- ***Subcontractor Pay Items(s):*** [pick list: project pay item list]
- ***Subcontractor Original Award Amount(s):*** [user input]
- ***Subcontractor Final Amount(s):*** [user input]
- ***Subcontractor Award Date(s):*** [user input]

Some projects may elect not to have the contractor enter subcontractor information. Provide ability for FHWA to "disable" or "hide" contractor's subcontractor input view.



Develop CSTATUS Report (see REPORTS APPENDIX) from Progress Estimate Process data, Project Information data and CSTATUS Input described above.

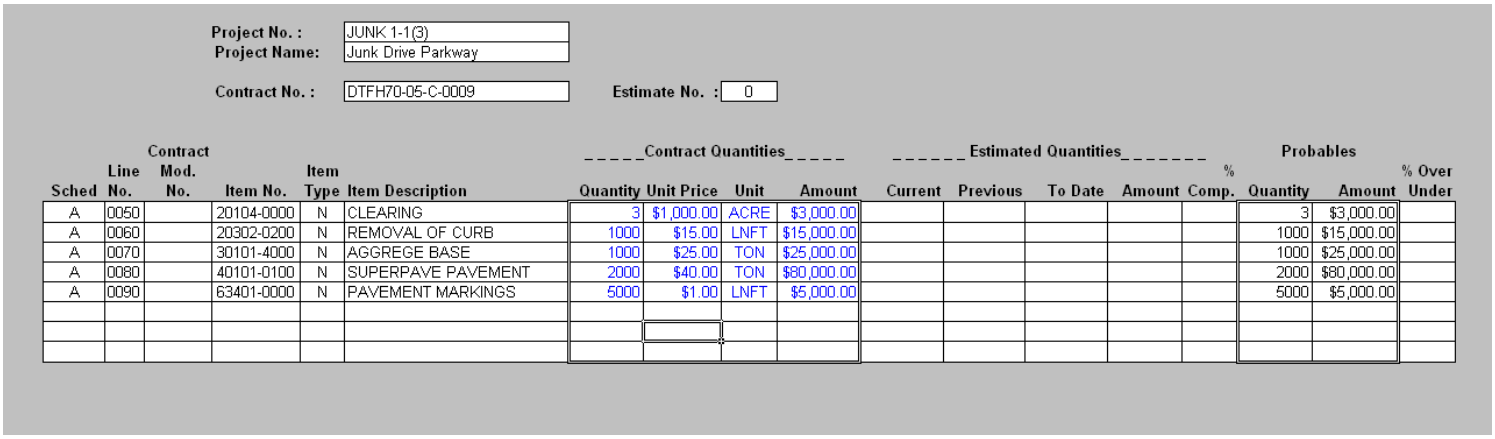
C4.4 Initial Estimate and Add Incentive Pay Items.

C4.4.1 Initial Estimate. *Provide view(s) to enter/show the following data for Initial Estimate*

- Project Number
- Project Name
- Schedule type
- Schedule letter
- ***Progress Estimate Number:*** [set initial number to zero]
- Pay Item
- Pay Item Description
- Supplemental Item Description
- ***Pay Item type:*** [Set all to Normal (N)]
- Account Numbers
- Unit Price (from Acquisitions component)

- Pay Unit
- Quantity (from Acquisitions component)
- ***Probable Quantity:*** [set Probable Quantity to Bid Quantity]
- ***Current Pay Quantity:*** [Set to zero – zeros are not to show]
- ***Quantity Paid to date:*** [Set to zero – zeros are not to show]
- ***Remaining Quantity:*** [Probable Quantity – Quantity Paid to Date (zeros are not to be shown)]

- Contractor Name (from Acquisitions)
- Contractor DUNS Number (from Acquisitions)
- Contract Award Date (from Acquisitions)
- ***Contractor Bank Name:*** [user input]
- ***Contractor Bank Address:*** [user input]
- ***Contractor ABA Number:*** [user input]
- ***Contractor Bank Account Number:*** [user input]



Project No. : JUNK 1-1(3)
Project Name: Junk Drive Parkway

Contract No. : DTFH70-05-C-0009 Estimate No. : 0

Sched	Line No.	Contract Mod. No.	Item No.	Item Type	Item Description	Contract Quantities Quantity	Unit Price	Unit	Amount	Estimated Quantities Current	Previous	To Date	Amount	% Comp.	Probables Quantity	Amount	% Over Under
A	0050		20104-0000	N	CLEARING	3	$1,000.00	ACRE	$3,000.00						3	$3,000.00	
A	0060		20302-0200	N	REMOVAL OF CURB	1000	$15.00	LNFT	$15,000.00						1000	$15,000.00	
A	0070		30101-4000	N	AGGREGE BASE	1000	$25.00	TON	$25,000.00						1000	$25,000.00	
A	0080		40101-0100	N	SUPERPAVE PAVEMENT	2000	$40.00	TON	$80,000.00						2000	$80,000.00	
A	0090		63401-0000	N	PAVEMENT MARKINGS	5000	$1.00	LNFT	$5,000.00						5000	$5,000.00	

Example Initial Estimate prior to incentive items added (Example is for Information Only)

C4.4.2 Automatically Add Incentive Pay Items. Create the Zero Estimate (initial Progress Estimate) and automatically add incentive pay items. Initiate a process that adds line items to pay items that have material/smoothness/roughness incentives. Pay item specific incentives such as materials, smoothness and roughness are assigned a pay item type identifier to the Pay Item Type field:

For example:

40101-0100 **M** Superpave or 40101-0100 **R** Superpave or 40101-0100 **S** Superpave

Where **M** = Material Incentive, **R** = Roughness Incentive and **S** = Smoothness Incentive.

Also add (**Quality:**) to the supplemental pay item description field of the added incentive pay items. The user will have the ability to add additional verbiage after (Quality:) which is to appear as supplemental information in the description field.

Provide the ability for the user to select the Pay Unit of the added incentive item from a pick list of pay units. Also provide the ability for the user to input the Unit Price and the Probable Quantity for that incentive pay item.

Project No. : JUNK 1-1(3)
Project Name: Junk Drive Parkway

Contract No. : DTFH70-05-C-0009 **Estimate No. :** 0

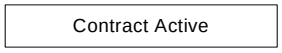
Sched	Line No.	Contract Mod. No.	Item No.	Item Type	Item Description	Contract Quantities Quantity	Unit Price	Unit	Amount	Estimated Quantities Current	Previous	To Date	Amount	% Comp.	Probables Quantity	Amount	% Over Under
A	0050		20104-0000	N	CLEARING	3	$1,000.00	ACRE	$3,000.00						3	$3,000.00	
A	0060		20302-0200	N	REMOVAL OF CURB	1000	$15.00	LNFT	$15,000.00						1000	$15,000.00	
A	0070		30101-4000	N	AGGREGE BASE	1000	$25.00	TON	$25,000.00						1000	$25,000.00	
A	0071		30101-4000	M	AGGREGE BASE (QUALITY)												
A	0080		40101-0100	N	SUPERPAVE PAVEMENT	2000	$40.00	TON	$80,000.00						2000	$80,000.00	
A	0081		40101-0100	R	SUPERPAVE PAVEMENT (QUALITY)												
A	0090		63401-0000	N	PAVEMENT MARKINGS	5000	$1.00	LNFT	$5,000.00						5000	$5,000.00	

Example Initial Estimate after incentive items automatically added (Example is for Information Only)

C4.4.3 Manually Add Pay Items (Other than Contract Modification Pay Items). At any time after the Initial Estimate has been created, provide a view to add additional pay items to the project. These additional pay items may be pay item specific (such as materials-on-hand, preparatory work, retainages, deductions, adjustments, material incentives, smoothness incentives). These additional pay items may also be non-pay item specific (such as partnering, value-engineering, performance/time incentives, interest, liquidated damages, lab trailer, contingencies, etc.). Each additional incentive pay item will be identified with a Pay Item Type

(i.e.: **P** for Partnering). View must include the following:

- Schedule Letter: [pick list]
- ***Pay Item:*** [pick list: project pay item list or master pay item list]
- Pay Item Description (display appropriate description from whatever pay item is selected)
- ***Supplemental Description:*** [user input]
- ***Pay Item Type:*** [pick list: normal, material incentive, smoothness incentive, materials-on-hand, preparatory work, retainages, deductions, adjustments, etc.]
- ***Quantity:*** [user input]
- ***Unit Price:*** [user input]
- ***Pay Unit:*** [user input]
- ***Probable Quantity:*** [user input]



Once a Notice to Proceed has been issued the Project Milestone value should be set to CSTATUS-ACTIVE.

C4.5 IDR/CDR Process. This process is to be accessible over the network using the web interface or on a non-networked or standalone computer either offline or on a client server interface. This process must work on both laptop and desktop computers.

Provide the ability for creating both Contractor Daily Records (CDR) and FHWA Inspector Daily Records (IDR). See example Daily Report in REPORTS APPENDIX. All data within CDR's and IDR's is to be searchable.

C4.5.1 Create Labor and Equipment Information. Provide a view for FHWA or the contractor to enter labor and equipment present on the project. This is a master list that will be utilized on all subsequent Daily Records. The information includes:

Labor List (Project Specific)

- ***Labor Classification:*** [user input *]

Equipment List (Project Specific)

- ***Equipment Type:*** [user input *]

* *Once the information has been user input, include the information on a pick list for use on subsequent project daily reports (for this project). Provide that entries within this pick list can be deleted by the user.*

C4.5.2 View/Data Required for Both CDR and IDR.

C4.5.2.1 Collect Daily General Information. Provide a CDR/IDR header view to include the following:

- Project Number
- Project Name
- ***Daily Record*:** [Automatically populated with FHWA when FHWA is developing an IDR. Automatically populated with Contractor when contractor is developing a CDR.]
- ***Weather/Temperature:*** [user input]

C4.5.2.2 Collect Daily Record of Construction Activity. Provide a view to input/pick or assign the following (see example Daily Report in APPENDIX - REPORTS), allow for multiple daily entries:

- ***Work Activity Code:*** [pick list: A-K]
- ***Work Activity:*** [user input: brief description field for each Work Activity Code *]
- ***Location:*** [user input: location for each assigned Work Activity Code]
- ***Associated Pay Items:*** [pick list: project pay items for each assigned Work Activity Code]

* Once the information has been user input, include the information on a pick list for use on subsequent project daily reports. Provide that entries within this pick list can be deleted by the user.

- ***Contractor/Subcontractor:*** [pick list: data collected earlier]
  - ***Number of:*** [user input (for each labor classification for each Work Activity Code)]
  - Labor Classification: [pick list (from above created list)]
  - ***Number of***: [user input (for each equipment type for each Work Activity Code)]
  - Equipment Type: [pick list (from above created list)]
  - ***Move-in Date:*** [user input for each piece of equipment]
  - ***Move-out Date:*** [user input for each piece of equipment]
  - ***Production Time:*** [user input: person hours worked by each labor classification for each Work Activity Code]
  - ***Equipment Time:*** [user input: hours worked, hours idle and idle code for each equipment type for each Work Activity Code]
  - ***Idle Code:*** [pick list: B = Broken Down, W = No Available Work, P = No Operator & S = Suspended

C4.5.2.3 Collect Safety, Erosion, and Traffic Control Inspection Data. Provide view for answering the questions below:

- ***Traffic Control Checked?:*** [pick list: Yes - No Problems, Yes – Problems or No (Include free form text if Yes- Problems is selected)]

- ***Erosion/Sediment Control Checked?:*** [pick list: Yes - No Problems, Yes – Problems or No (Include free form text if Yes- Problems is selected)]
- ***Unsafe Operations Observed?:*** [pick list: Yes or No (Include free form text if Yes is selected)]
- ***Accidents:*** [pick list: Yes or No (Include free form text if Yes is selected)]
- ***Reported By:*** [user input: once the name has been user input, include the name on a pick list for use on subsequent project daily reports.]

Provide a view to develop and/or review Pay Notes associated with a specific Inspector's or Contractor's IDR/CDR (See Pay Note Process Section)

C4.5.3 Additional Data Required for FHWA IDR ONLY.

- ***FHWA Daily Narrative Record:*** Provide a view to input narrative report of construction activity. [user input: free form text]
- ***FHWA Quality Control Narrative Record:*** Provide a view to input narrative report of daily QC activity. [user input: free form text]

Flag Project Issues: Provide the ability to flag an FHWA IDR for an issue. Provide the ability for FHWA users to search IDR's for these flags by issue:

- ***Specific Issues on IDR?:*** [pick list: yes or no]
- ***IDR Issue****:* [user input *]

* Once the information has been user input, include the information on a pick list for use on subsequent project daily reports. Provide that entries within this pick list can be deleted by the user.

Provide a view for the Project Engineer (or designee) to review the IDR with the following information:

- ***Reviewed By:*** [user input: once the name has been user input, include the name on a pick list for use on subsequent project daily reports.]
- ***Review Comments:*** [user input: Provide a view where reviewer can add comments to the IDR (i.e. disagree with certain aspects of the IDR)

C4.5.4 Additional Data Required for Contractor CDR ONLY.

- ***Contractor Daily Narrative Record:*** Provide a view to input narrative report of construction activity. [user input: free form text]
- ***Contractor Quality Control Narrative Record:*** Provide a view to input narrative report of daily QC activity. [user input: free form text]

Provide a view for the Contractor Superintendent (or designee) to review the CDR with the following information:

- ***Reviewed By:*** [user input: once the name has been user input, include the name on a pick list for use on subsequent project daily reports.]
- ***Review Comments:*** [user input: Provide a view where reviewer can add comments to the CDR (i.e. disagree with certain aspects of the CDR)

Provide a mechanism to submit CDR to FHWA for review.

Flag Project Issues: Provide the ability to flag a Contractor CDR for an issue. Flags and issues will be viewable by FHWA only. Provide the ability for FHWA users to search CDR's for these flags by issue:

- ***Specific Issues on CDR?:*** [pick list: yes or no]
- ***CDR Issue****:* [user input *]

* Once the information has been user input, include the information on a pick list for use on subsequent project daily reports. Provide that entries within this pick list can be deleted by the user.

Provide a view where FHWA can add comments to the CDR (i.e. disagree with certain aspects of the CDR). Allow for the CDR to be returned to the Contractor for editing and re-submittal if required or requested by FHWA.

PE Daily Diary

C4.6 PE Daily Diary. Provide a view for Project Engineer to input daily free form text. Include the following on the view:

- ***Date:*** [user input]
- Project Number
- Project Name
- ***Project Engineer Narrative:*** [user input: free form text]

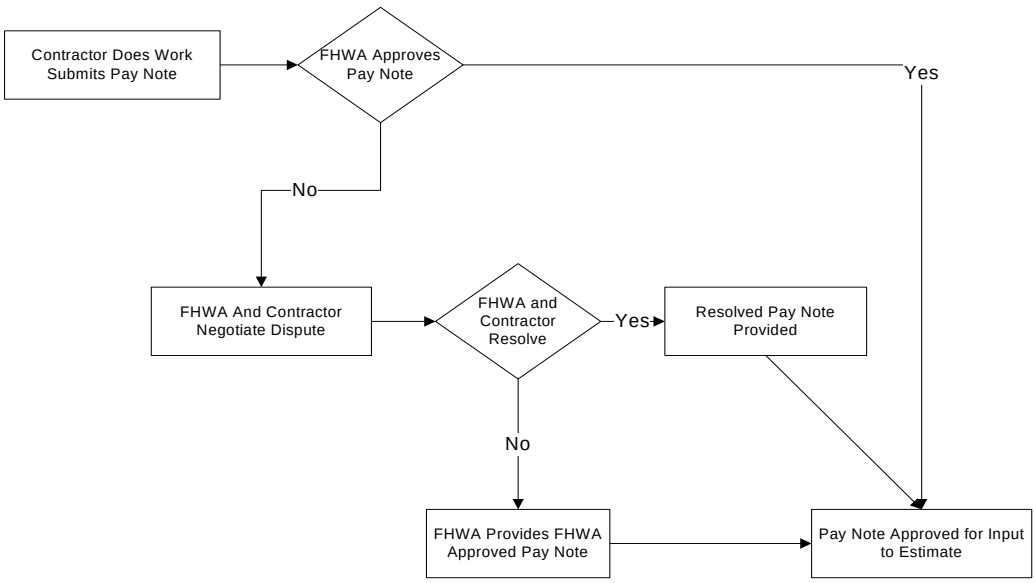
Flag Project Issues: Provide a view for FHWA to enter issues on the project. Provide the ability to flag a specific diary entry for an issue. Provide the ability for FHWA users to search diaries for these flags by issue:

- ***Specific Issues in Diary?:*** [pick list: yes or no]
- ***Diary Issue****:* [user input *]

* Once the information has been input, include the information on a pick list for use on subsequent diary reports. Provide that entries within this pick list can be deleted by the user.

C4.7 Pay Note Process.

Construction Figure 2
Pay Items Detail



Contractor Does Work Submits Pay Note

C4.7.1 Contractor Pay Notes. Provide a view for the Contractor to input and submit Pay Notes for FHWA approval/payment. Contractor Pay Notes should include the following data:

- Project Number
- Project Name
- ***Contractor Pay Note:*** [no input required: just an identifier label to show who generated the pay note]
- ***Pay Item Number with Pay Item Type Identifier*** [pick list: from project pay item/pay type (for each unique pay item/pay type, multiple locations, dates, and quantities can be entered at one time)]
- ***Location:*** [user input]
- ***Date:*** [user input]
- ***Pay Quantity:*** [user input]
- ***Measurement Type:*** [pick list – interim or final (for interim, see FHWA approval section below)]

- ***Quantity Remarks:*** [user input]
- ***Total Production Days:*** [user input]
- ***Production Rate:*** [calculated: Pay Quantity/Total Production Days]
- ***Supporting Documentation:*** [The offeror should suggest a method for including this type information. This could include photos, scans of hand written notes, scans of sketches, pdf files, CAD files…]
- ***Person Performing Measurement:*** [user input: once the name has been user input, include the name on a pick list for use on subsequent Pay Notes.]
- **Account number**
- ***Submit to FHWA?:*** [pick list: Yes or No]

Some projects may elect to only use FHWA Pay Notes. Provide for FHWA to "disable" or "hide" Contractor Pay Note view.

C4.7.2 FHWA Approval of Contractor Pay Notes. Provide a view to include all the above-submitted Contractor Pay Note data. Provide the ability for FHWA to approve, disapprove or (for interim measurements) mark as "information only for each individual entry included in a Pay Note. Entries in the Pay Notes marked as "information only" will not be forwarded to the Progress Estimate. Include the following in the view:

Provide the ability to send FHWA disapproved Pay Notes back to the contractor:

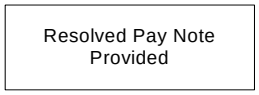
- ***Submit to Contractor:*** [pick list: Yes or No]

Provide a mechanism for reviewing the "information only" entries.

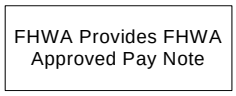
Provide that all FHWA approved Contractor Pay Note editable and are ready for input into the current progress estimate. Additional pay notes can be added to correct discrepancies. Once a Contractor Pay Note is approved, provide a view where FHWA can add the following to each Pay Note:

- ***Item Remarks*** [user input free form text]
- ***Reference:*** [user input free form text]
- ***Page Number Reference:*** [user input free form text]

FHWA disapproved Pay Note entries are negotiated with Contractor.



If disapproved Pay Note is resolved, the Contractor re-submits an acceptable Contractor Pay Note for FHWA approval.



If dispute cannot be resolved and FHWA believes some payment should be made, then FHWA generates an FHWA Pay Note for the disputed item to be paid.

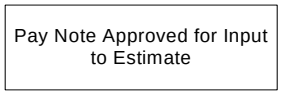
Provide the ability to send a Pay Note report with its approval status for the current estimate to the contractor for information purposes.

C4.7.3 FHWA Pay Notes. Provide a view for the FHWA to input Pay notes. FHWA Include the following on the FHWA Pay Note view:

- Project Number
- Project Name
- ***FHWA Pay Note:*** [no input required: just an identifier label to show who generated the pay note]
- ***Pay Item Number with Pay Item Type Identifier*** [pick list: from project pay item/pay type (for each unique pay item/pay type, multiple locations, dates, and quantities can be entered at one time)]
- ***Location:*** [user input]
- ***Date:*** [user input]
- ***Pay Quantity:*** [user input]
- ***Measurement Type:*** [pick list – interim or final (for interim, see FHWA approval section below)]
- ***Quantity Remarks:*** [user input]
- ***Total Production Days:*** [user input]
- ***Production Rate:*** [calculated: Pay Quantity/Total Production Days]
- ***Supporting Documentation:*** [The offeror should suggest a method for including this type information. This could include photos, scans of hand written notes, scans of sketches, pdf files, CAD files…]
- ***Person Performing Measurement:*** [user input: once the name has been user input, include the name on a pick list for use on subsequent Pay Notes.]
- *CONSTR Account Number:* **[pick list]**
- ***Item Remarks*** [user input free form]
- ***Reference*** [user input free form]
- ***Page Number Reference*** [user input free form]
- ***Submit for Input Into Current Progress Estimate*** [pick list: Yes, No]

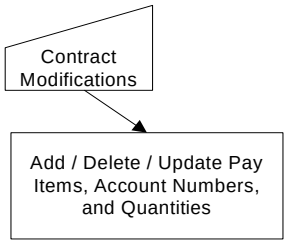
Provide the ability for FHWA to mark interim Measurement Types as “information only” for each individual entry included in a Pay Note. Entries in the Pay Notes marked as “information only” will not be forwarded to the Progress Estimate. Provide a mechanism for reviewing the “information only” entries.

Once submitted for input for the next progress estimate, FHWA Pay Note Location/Quantity cannot be edited Additional pay notes can be added to correct discrepancies.



All approved FHWA and/or Contractor Pay Notes are to be automatically included in the current Progress Estimate under Current Pay Quantity.

C4.8 Contract Modification Process.



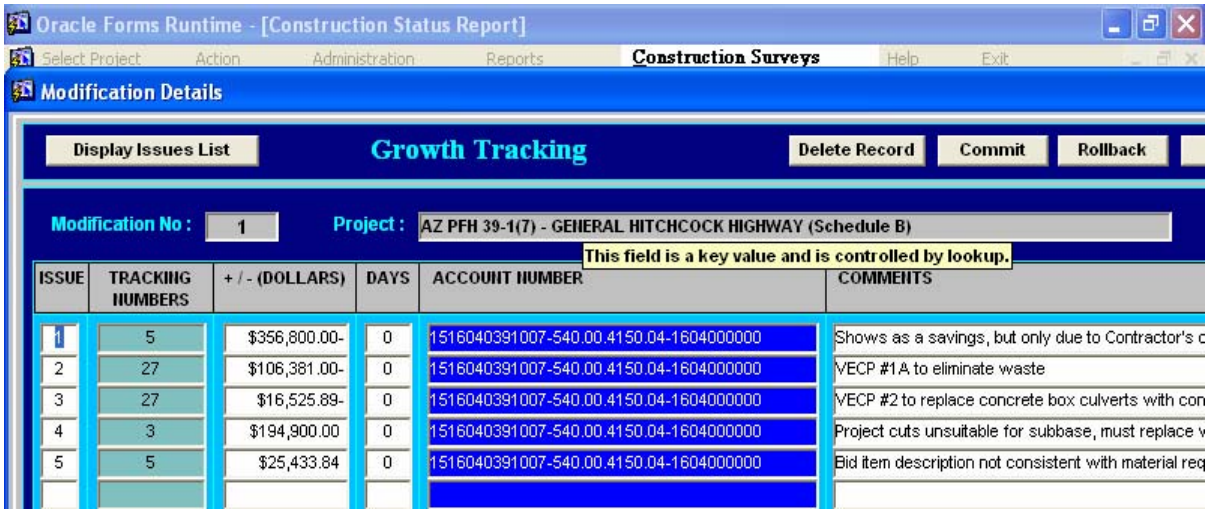
C4.8.1 Contract Modifications. Provide a view to develop and track Contract Modifications. Include the following in the view:

- State
- Project number
- Contract Number
- ***Contract Modification Type:*** [pick list: Supplemental Agreement, Change Order, Administrative Change or Transfer of Expenditures]
- ***Contract Modification Number***: [user input (a check should be performed to see that the number entered does not correspond to another modification)]
- ***FAR Authority***: [pick list: TBD – ability to pick multiple items from list (also allow for user input)]
- ***Contract Modification Description:*** [user input free form]
- ***CM Initiated by:*** [pick list: FHWA/Construction, FHWA/Other, Owner/Agency, Cooperating Agency, Contractor, Outside Party, Joint FHWA/Contractor or Other (specify)]

- ***Contract Modification Growth Tracking Issue (multiple issues possible):*** [user input number]. **For each issue:**

- ***Assign a Pay Item to the Issue***: [Pick List: From list of pay items for the specific modification – see Add Pay Items & Descriptions of CMs section]
- ***Issue Time Increase/Decrease*:** [user input – number of days (+/-)]
- *Assign Beneficial/Detrimental designation:* **[pick list**: beneficial - **A change requested (and funded) by the client agency or a change for work that is not in the original work required**, detrimental - **A change that is required to complete the intent of the original design.**]
- ***Assign a Reason for Issue:*** [pick list: TBD – approximately 30 items (tie Beneficial/Detrimental designation to each Reason for Issue (TBD))]
- ***Gross Increase:*** [user input]
- ***Gross Decrease:*** [user input]
- ***Comments:*** [user input free form]

- ***Contract Time Increase/Decrease:*** [calculated: summation of Issue Time Increase/Decrease]
- ***Final Gross Modification Total:*** [calculated: summation of Gross Increases + summation of Gross Decreases]
- ***Date PR signed:*** [user input date]
- ***Date SF30 Signed by Contractor:*** [user input date]
- ***Date SF30 Signed by CO:*** [user input date]
- ***Date CM Work Started:*** [user input date]
- ***Net Authorization Change:*** [user input dollar amount]



Example of some of Contract Growth data (Example is for Information Only)

Add / Delete / Update Pay Items, Account Numbers, and Quantities

C4.8.2 Add Pay Items for CM. All pay items ADDED/MODIFIED as a result of a Contract Modification should be tagged with the CM number (Allow CM Mod No. box to have multiple entries)

Project No. : JUNK 1-1(3)
Project Name: Junk Drive Parkway

Contract No. : DTFH70-05-C-0009 Estimate No. : 1

Sched	Line No.	Contract Mod. No.	Item No.	Item Type	Item Description	Contract Quantities Quantity	Unit Price	Unit	Amount	Estimated Quantities Current	Previous	To Date	Amount	% Comp.	Probables Quantity	Amount	% Over Under
A	0050		20104-0000	N	CLEARING	3	$1,000.00	ACRE	$3,000.00						3	$3,000.00	
A	0060		20302-0200	N	REMOVAL OF CURB	1000	$15.00	LNFT	$15,000.00						1000	$15,000.00	
A	0065	CM001	20305-0200	N	REMOVAL OF GUARDRAIL		$5.00	LNFT							500	$2,500.00	
A	0070		30101-4000	N	AGGREGE BASE	1000	$25.00	TON	$25,000.00						1000	$25,000.00	
A	0071		30101-4000	M	AGGREGE BASE (QUALITY)		$2.00	TON	$0.00						1000	$2,000.00	
A	0080		40101-0100	N	SUPERPAVE PAVEMENT	2000	$40.00	TON	$80,000.00						2000	$80,000.00	
A	0081		40101-0100	R	SUPERPAVE PAVEMENT (QUALITY)		$10.00	TON	$0.00						2000	$20,000.00	
A	0090	CM001	63401-0000	N	PAVEMENT MARKINGS	5000	$1.00	LNFT	$5,000.00						7000	$7,000.00	

Example Progress Estimate with a Contract Modification Pay Item added and one modified (Example is for Information Only)

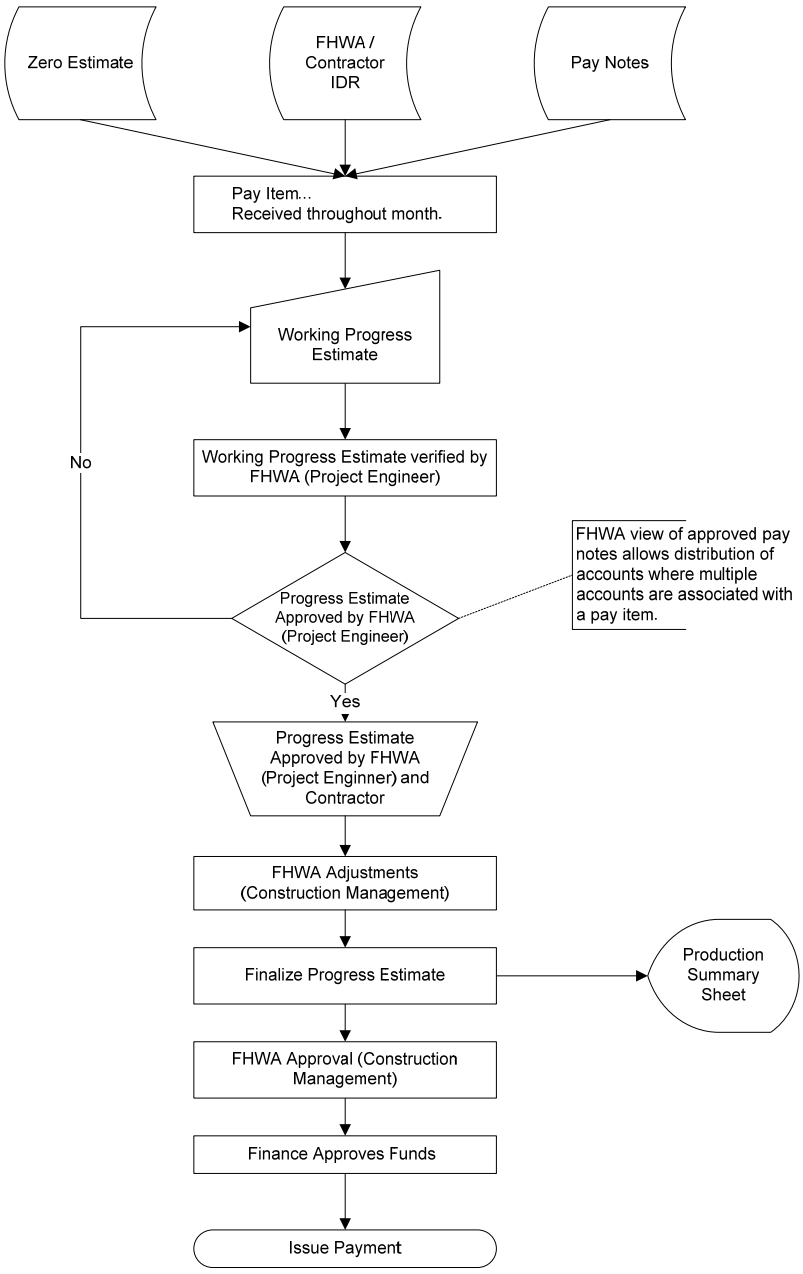
- ***Schedule Letter:*** [pick list]
- ***Pay Item Type:*** [pick list: normal, deductions, adjustments (other Pay Item Types are not available in the CM process]
- ***Pay Item:*** [pick lists: project pay items or master pay item list or generic CM items]
- Pay Item Description (display appropriate description from whatever pay item is selected)
- ***Supplemental Item Description:*** [user input]
- ***Pay unit:*** [for normal Pay Item Type, unit will automatically be assigned. If not normal Pay Item Type, provide a pick list to choose the pay unit]
- ***CONSTR Account Number:*** [pick list or user input (for new accounts)]
- Contract Modification Number: [carried forward from CM view]
- ***Unit Price:*** [user input]
- ***Bid Quantity:*** [user input for new pay items (bid quantities will not change for pay items already in contract)]
-
- ***Probable Quantity:*** [user input]

Once CM has been issued (*Date SF30 Signed by CO*) CM data is available for CSTATUS reports and Progress Estimate.

DO NOT store negotiated unit prices for CM <u>added</u> pay items with the regular advertised bid pay item history. Provide the capability to store CM negotiated price history separately and in a similar manner as bid history.

C4.9 Progress Estimate Process.

Construction Figure 3
Progress Estimate Process



Progress Estimate Report: See REPORTS APPENDIX. Provide ability to Print Progress Estimate with or without probable quantities or probable amounts.

See REPORTS APPENDIX for example of a Progress Estimate**.**

C4.9.1 Progress Estimate View. Provide a view to adjust pay item quantities for the progress estimate. Display the following information in the view:

- Project Number
- Project Name
- ***Schedule Letter:*** [pick list: available project letters]
- Progress Estimate Number
- ***Pay Item:*** [pick lists: project pay items]
- Pay Item Description (display appropriate description from whatever pay item is selected)
- ***Supplemental Item Description:*** [user input (supplemental item descriptions from CM or other processes will be carried forward to this field)]
- Pay Item type
- Account Number
- Unit Price
- Pay unit
- Bid Quantity
- ***Probable Quantity:*** [user input as necessary]
- ***Current Pay Quantity:*** [calculated: total of Approved Pay Note Quantities for current Progress Estimate]
- ***Quantity Paid to date:*** [calculated: Quantity Paid to Date from last approved Progress Estimate + Current Pay Quantity]
- ***Remaining Quantity:*** [calculated: Probable Quantity – Quantity Paid to Date]
    - If Remaining Quantity is negative, provide a warning to the user to change Probable Quantity. This warning is not to be inactivated until the probable quantity is changed.
- ***Reference:*** [user input]

Also display the following:
A ledger-type table display (scrollable) showing:

- ***Probable Quantity Added this Estimate:*** [calculated: Probable Quantity from last approved Progress Estimate - Probable Quantity from current Progress Estimate]
- Date (use Date Function Defined in General Data Requirements Section)
- Approved Pay Notes for Current Estimate

The ledger-type table is used to record the current progress estimate data, as well as show previous estimate submissions.

C4.9.2 Progress Estimate Summary View. Provide a summary view for the current progress estimate. Include in the view:

- Project Number
- Project Name
- ***Estimate Type:*** [pick list: Initial, Progress, Settlement Agreement, Semi-Final, Final]

- ***Progress Estimate Number:*** [calculated: previous Progress Estimate number +1]
- ***Progress Estimate From Date:*** [1 day past previous Progress Estimate's To Date]
- ***Progress Estimate To Date:*** [user input date]
- ***Contractor's Invoice Received:*** [user input date]
- ***Contractor's Invoice Version:*** [calculate: first occurrence is set to 1, add 1 if disapproval records exist]
- ***Contractor's Invoice Approved:*** [user input date, or NOT APPROVED]
- Awarded Bid Amount (from Acquisitions Component)
- ***Current Progress Estimate Total:*** [calculated: Summation of Quantity Paid to date for each pay item]
- ***CONSTR Probable Amount:*** [calculated: Summation of Probable Quantity for each pay item]
- ***Total Estimates Previously Paid:*** [calculated: Total Estimates Paid to Date from last Progress Estimate]
- ***Total Estimates Paid to Date:*** [calculated: Total Estimates Previously Paid + Current Progress Estimate Total]
- ***Total Authorized CONSTR Amount:*** [calculated: Summation of CONSTR Current Authorized Amount(s)]
- ***Total Current CE/CE-AE Amount:*** [calculated: Summation of CE/CE-AE Current Account Expenditure(s)]
- ***Total Probable CE/CE-AE Amount:*** [calculated: Summation of CE/CE-AE Current Probable Amount(s)]
- Notice to Proceed (from Project Information)
- Original Completion Date (from Project Information)
- Revised Completion Date (from CSTATUS)
- Estimated Completion Date (from CSTATUS)
- Actual Completion Date (from Final Voucher)
- Contract Days (from CSTATUS)
- ***Current Days Used:*** [calculated: current Progress Estimate To Date (from Progress Estimate) – Notice to Proceed Date]
- ***Percent Work Completed:*** [calculated: Total Estimates Paid to Date (from current Progress Estimate) divided by CONSTR Probable Amount]
- ***Percent Time Used:*** [calculated: Current Days Used divided by Contract Days]
- ***Surplus*** or ***Deficit:*** [calculated: CONSTR Probable Amount - Total Authorized CONSTR Amount]

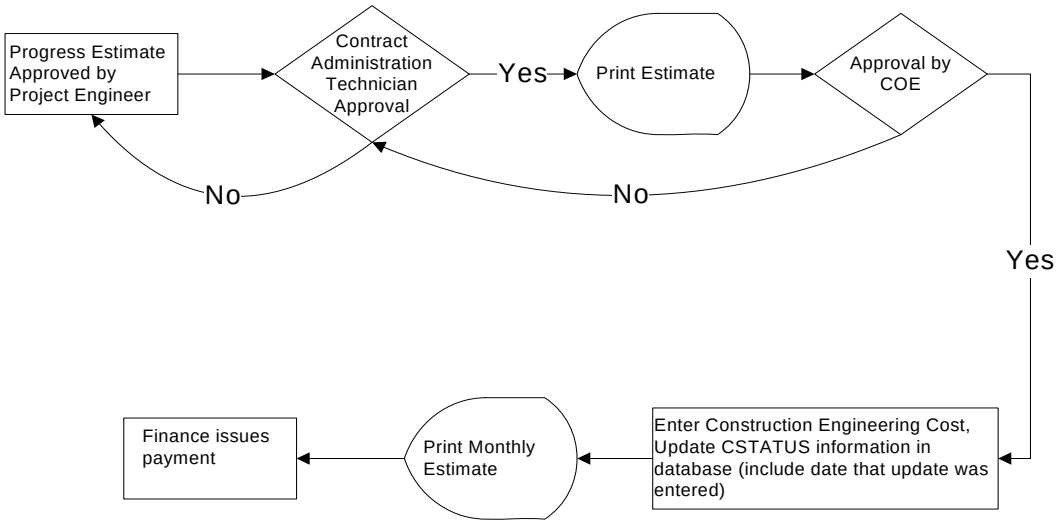
C4.9.3 Disapprove Invoice View. Provide a view when the Contractor's Invoice Approved field is set to NOT APPROVED with the following:

- Project Number
- Project Name
- Estimate Type
- Progress Estimate Number
- Contractor Invoice Received

- Contractor Invoice Version
- ***Contractor Invoice Disapproval Date:*** [user input date]
- ***Contractor Invoice Disapproval Reason:*** [text box for free flow text]

C4.10 Progress Estimate Approval Process.

Construction Figure 4
Progress Estimate Approval Process

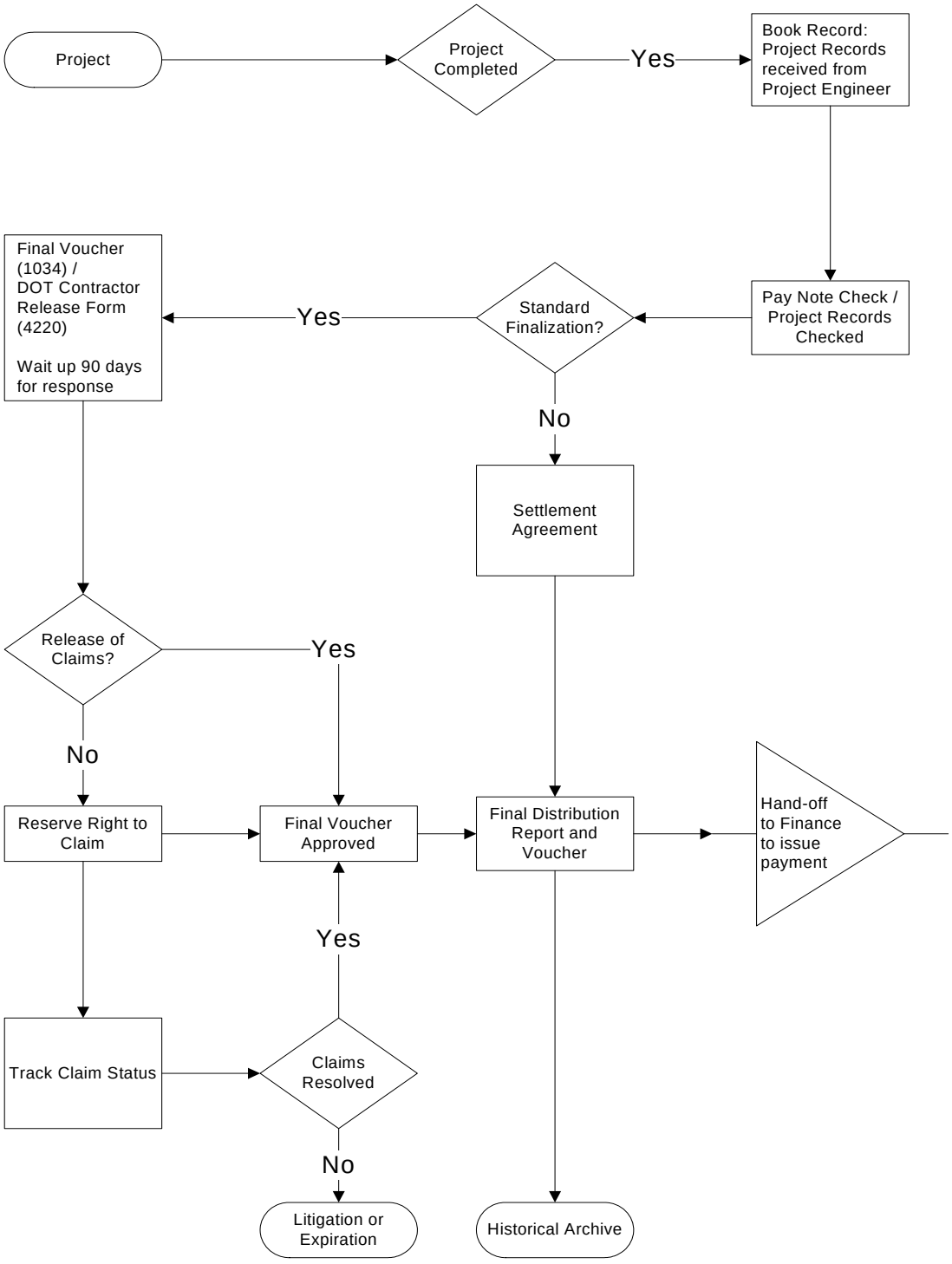


Tracking Progress Estimate Approval and Payment. Provide a view for tracking Progress Estimate Approval and Payment. Include the following data in the view:

- Progress Estimate Number
- Contractor's Invoice Received (from Progress Estimate)
- Contractor's Invoice Version (from Progress Estimate)
- Contractor's Invoice Approved (from Progress Estimate)
- ***Progress Estimate Approved by Construction Management:*** [user input text (name): text to be retained for subsequent progress estimates]
- ***Progress Estimate Approved Date:*** [user input date]
- ***Due Date to Finance:*** [calculated date: Contractor's Invoice Received date + number of days [user input – input to be retained for subsequent progress estimates]
- ***Actual Date to Finance:*** [user input date]
- ***Due Date for Payment:*** [calculated date: Contractor's Invoice Received date + 14 calendar days]
- ***Actual Payment Date*****:** [user input date]

After the *Progress Estimate Approved* date is input, all Approved Progress Estimate information is available for CSTATUS report, and data can no longer be changed. After Progress Estimate is approved, mark all approved pay notes in that estimate as paid and also mark those pay notes as no longer available for payment in next progress estimate.

Construction Figure *5*
Progress Estimate Final Voucher



C4.11 Final Voucher. Provide a view to track the following:

- ***Substantial Completion Date:*** [user input date]
- ***Actual Completion Date:*** [user input date]
- ***Final Inspection Date:*** [user input date]
- ***Preliminary Acceptance Letter Sent to Contractor:*** [user input date]
- Cooperating Agency (multiple): [pick list from Design project information of State, County and Partner]
- ***Cooperating Agency Acceptance Sent: (multiple)*** [user input date]
- ***Cooperating Agency Acceptance Received: (multiple)*** [user input date]
- ***Acceptance Letter Sent to Contractor:*** [user input date]
- ***Final Acceptance Date:*** [user input]
- ***Project Records Rec'd from PE:*** [user input]
- ***Final Construction Report Information Received from PE:*** [user input date]
- ***Materials Certification Signed:*** [user input date]
- ***Final Records Checked:*** [user input date]
    - ***Contract Mod/Admin Changes Checked:*** [pick list: Yes, No]
    - ***Days Allowed Verified:*** [pick list: Yes, No]
    - ***1413's (Subcontractor's Certification)***[pick list: Yes, No]
    - ***DUNS Number Included*** [pick list: Yes, No]
    - ***Proof Final Progress Estimate/Pay Notes*** [pick list: Yes, No]
- ***As-Constructed Plans Submitted:*** [user input date]
- ***Final Voucher Package to Contractor:*** [user input]
- ***Final Voucher Package from Contractor Due:*** [calculated date: Final Voucher Package to Contractor date + 90 calendar days]
- ***Final Voucher Package from Contractor:*** [user input]
- ***Final Voucher to Finance for Payment:*** [user input date]
- ***Final Voucher Paid:*** [user input date]
- ***FCR Signed:*** [user input date]
- ***Claim Received Date and Remarks:*** [user input date and free form text box]
- ***Contracting Officer Decision Issued:*** [user input date]
- ***Settlement Agreement:*** [pick list: Yes – input date, No]
- ***Settlement Agreement Date and Remarks:*** [user input date and free form text box]
- ***Contracting Officer Decision Appealed Date:*** [user input date]
- ***Claim Settlement Date:*** [user input (add text box)]

When Final Acceptance Date is input, set Project Milestone to CSTATUS-COMPLETE. If claim Received Date is populated, set Project Milestone to CSTATUS-DISPUTED. If Claims Settlement Date is populated and Final Voucher to Finance for Payment is populated, set Project Milestone to CSTATUS-FINALED.

C4.12 Track Claim. Provide a view to track the status of the claim.

Once the Claim Received Date is populated, the following bullets are generated:

- ***Claim Number:*** [user input]
- ***Claim Amount:*** [user input]
- Claim Received Date (from Final Voucher)
- Contracting Officer Decision Issued Date (from Final Voucher)
- Settlement Agreement Date (from Final Voucher)
- Contracting Officer Decision Appeal Date (from Final Voucher)
- Claim Settlement Date (from Final Voucher)

Section C5. – EEBACS Administrative and Special Interfaces Component

C5.1 Master Pay Item List Interface. Provide an interface to Add/Modify/Delete/View the pay items in the Master Pay Item List. This interface is an EEBACS Administrator level interface. Provide a view to display the pay items contained in the list. The view is to function as the pick list to select items to modify or delete. Provide a browse (spreadsheet) type view with sort/filter capabilities as shown in the Filter/Sort Appendix.

Display the following fields in the view(with the option to add/subtract all fields in the Master Pay Item List):

- Unique Pay Item Number
- Pay Item Description (U.S. Customary Units)
- Pay Item Description (Metric Units)
- Pay Unit (U.S. Customary Units)
- Pay Unit (Metric Units)
- Bid Decimal
- Pay Decimal
- Incentive type
- Standard Specifications FP Year

Modify/Delete Existing Data. When the user selects an existing pay item from the Master Pay Item View, provide a secondary view with all fields displayed containing the data from the pay item selected to allow the user to modify the existing data or to delete the pay item. Provide the user verification of the deletion. Provide for checks to the database to insure the Pay Item Number is unique. Utilize pick lists for Pay Unit, Pay Decimal, Bid Decimal, Incentive Type, and Standard Specifications FP Year. Provide the capability to have deleted pay items kept in the database for reference and for past projects which used the pay item or to remove completely from the database. Deleted pay items that remain in the database should only be viewable and selectable using this interface (all other components that view the Master Pay Item List cannot view these pay items)

Adding New Data. Provide an option to add new pay items. Provide a secondary view with all blank fields displayed for the new pay item for the user to input the needed data. Optionally, provide the capability for the user to select an item from the existing list and edit the data and enter a new pay item number to add a new item. Provide for checks to the list to insure the Pay Item Number is unique for both options. Do not allow duplicate pay item numbers. Utilize pick lists for Pay Unit, Pay Decimal, Bid Decimal, Incentive Type, and Standard Specifications FP Year.

Provide other utilities for maintenance of the Master Pay Item List. Provide for restoring the list from previous updates (prior to edits). Provide tools to export the list to Microsoft Excel, Access, or delimited file. Provide tools to print the data to a report, including the entire database or a range from the database.

The Federal Lands Highway updates their Standard Specifications approximately every five years. Adjustments to pay items are avoided as much as practical, but sometimes the unique pay items may change from one Standard Specification FP Year to another. Provide a method and all necessary utilities to relate data stored from one Standard Specification FP Year to another (data crosswalk tables).

C5.2 Security Access and Default Settings Interface. Each component shall have associated with it routines that allow the respective system administrators to perform routine administration functions such as editing lists, setting system defaults, adding users and editing their rights, adding groups, editing group rights, and assigning users to groups without requiring or having direct access to the underlying database or tables data.

Provide the following within EEBACS:

1. Ability to assign the role of Administrator (by component) to users. There will be a privilege called Administration which can be assigned to users or groups in each component. Users with the Administration privilege for a component will be able to assign rights for that component but not for the other components. To have full rights, a users must have Administrator rights in all of the components.
2. Ability to create users and groups and assign permissions to each. Permissions must include at least the following view/read, write, modify, and delete. All permissions not explicitly given are to be denied. The user will have the highest privilege granted to them as a user or member of a group. For example if a user has rights to a particular item to "view" as a member of one group and "write" as a member of another group they will receive the write privilege.
3. The administrator for each component will be able to see users and groups created by Administrators for other components. They will be able to select these users and groups and add or remove rights for their component.
4. The users and groups shall have the ability to be associated with a specific office or group. The field should be a dropdown list that the Administrator can edit (add, delete, modify). The initial values will include: CFL, EFL, WFL, FLHO, NPS, FS, FWS, and Contractor. An Administrator will be able to select one of the options from the list and then see only the users that have been assigned to that office or group. For instance an administrator in CFL would be able to select CFL so they would only see the users from CFL.
5. By default the users will be able to see all of the projects created by their office. The system will provide the ability to limit a user to one or multiple projects as assigned by the Administrator. For example a contractor will only be given rights to view the project(s) they are working on. When a contractor working on a single project logs into the system they will only see one project.
6. The deletion of a user or group will include a prompt asking if the deletion applies to the rights in the current component or the entire system. The system log must record deletion information including the date and the name of the user making the deletion. Deleted user records are to remain in the system to maintain the integrity of approvals made in the system. Deleted user names will not be visible in the user list unless the Administrator

toggles a switch to make them visible. They will only be visible to the Administrator. The deleted names will be grayed out to indicate that they have been deleted. The Administrator will have the ability to reactivate a deleted name.

7. The names of deleted users will still print on reports generated by the EEBAC where appropriate.
8. Ability to generate reports on users, groups, office, deleted users, and group membership.
9. Ability to view membership in groups or roles.
10. Ability to limit views and data access available to FHWA internal users and external partners.
11. Ability to edit lists and defaults used by the program. The Administration users should be able to edit all of the lists and defaults used by their component. In some instances a default may be FLH office specific.
12. There will be one master Administrator account to use in emergency situations to restore privileges if other administrator accounts become locked or corrupt. The password for this account will be set by FHWA during installation. FHWA must have the ability to change the password on this account as needed.

C5.4 Ad hoc Reports

1. The system must provide the ability to generate all of the reports listed in the proposal in multiple formats including web browser friendly, Acrobat (by selecting the Acrobat printer), and printer friendly. Report headings must repeat on each page of the report. Report pages must be numbered. Printed reports must fit on normal United States paper sizes without losing text at any edge of paper. Larger reports must have the option to print on either legal or 11”x17” paper as selected by the user.
2. Make data from selected reports exportable to Excel, Access, or a delimited file.
3. The system must provide the tools necessary to generate ad hoc reports from any fields or lists in the database. Once a report is generated, provide the ability for the user to be able to name the report and save the report criteria for reuse by the user’s login ID or for all users of a component. The reports must meet the requirements of 1. and 2. above.
4. Provide tools to print an entire database table or a range from the database table based on user selected fields.

C5.5 Measurement Unit Conversion List Interface. Provide tools to manage default settings and default data for conversion factors to convert between U.S Customary measurement units and Metric measurement units. This includes tools for maintaining conversion factors lists.

C5.6 Inflation Interface. Provide tools to manage default settings and default data for inflation factors used to inflate unit prices in the EEBACS. This includes tools for maintaining inflation factors lists.

C5.7 Ad Hoc Unit Price Analysis (UPA) Interface.

Provide an interface to provide for ad hoc unit price analysis.

1. Provide a view to pick either bid history based unit price analysis, cost based unit price analysis, or cost per mile analysis.

2. If cost per mile is selected by the user provide a view to enter the ad hoc title information: Project name, Project number, State, Project Length. Once data is entered provide a "spreadsheet" type view displaying the following data from the bid history:
    - Project Number
    - Project Name
    - State(s)
    - Bid Date
    - Density
    - Terrain
    - Construction Type
    - Project Length
    - Inflation Factor
    - Total Bid Amount
    - Project Cost Per Mile

    Project Cost Per Mile = Total Bid Amount divided by Project Length
    Show up to 5 lowest bidders.
    Refer to Standard Requirements for Database Views Appendix for Sort, Filter and Find

    Provide in the view for an inflation toggle that would apply inflation factors to the Total Bid amount for each bidder (5 lowest bidders) divided by the project length based on the bid date.

From the filtered bid history view provide a method to manually select cost per mile prices. Display the following as prices are selected the view:

- Number of cost per mile prices selected
- Average of cost per mile prices selected
- Median of cost per mile prices selected
- High of cost per mile prices selected
- Low of cost per mile prices selected

Provide an input field for cost per mile prices for this project and automatically fill with the value calculated from the Average of cost per mile prices selected. The User should have the ability to overwrite that value with a user entered value.

Provide the following save/print options.

- Print the cost per mile estimate, and save the cost per mile data.

- Save the cost per mile data only
- Print the cost per mile data only
- End the utility and go back to the pick option view described in item 1 above.
- End the interface.

3. If bid history based unit price analysis is selected by the user, provide a view to enter the ad hoc title information: Project name, Project number, State, Project Length. Provide a view to select a pay item to do the ad hoc query on. Allow the user to select the pay item from the master pay item list or to manually enter the pay item or to enter a portion of the pay item description and show items that contain the string an let the user select the item. Provide for input of the quantity for the ad hoc pay item.

The ad hoc UPA process starts with setting search filters for the ad hoc pay item. Depending on whether more or less information is needed the user can return to the filtering process and sort/filter the data. Additional filtering can be done once the initial query has returned data and should work similar to sort/filter capabilities for the view as described in the Sort/Filter Appendix.

Provide the capability to sort on all of the fields in the Bid History database and be able to filter the fields.

The UPA process results can now show as a minimum (with the ability to add fields from the bid history to view dynamically) the results from the filtered Bid History (view has scrolling capability as necessary).

- Pay Item Number
- Pay Item Description
- Pay Unit
- Bid Date
- State
- Project Number
- Project Name
- Quantity
- All 5 low bidders prices
- Total Estimate Amount
- Terrain
- Construction Type
- Density

Selecting Bid Prices. From the filtered bid history view provide a method to manually select bid history unit prices. Highlight the bid prices as they are selected. Make the selection process work as a toggle to enable a price to be unselected if it is reselected after it is highlighted. Display the following as prices are selected:

- Number of Bids selected
- Average of bids selected
- Median of bids selected
- High of bids selected
- Low of bids selected

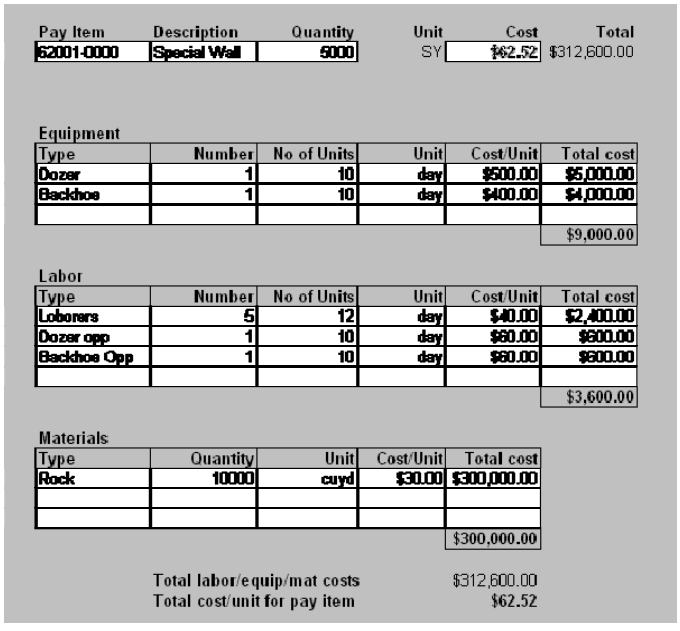
Provide an input field for Unit Price Used for this Pay Item and automatically fill with the value calculated from the Average of bids selected. Provide the ability to overwrite that value with a user entered value.

Provide the following save/print options.

- Print the UPA, and save the UPA data, ask to do another pay item
- Save the UPA data only, ask to do another pay item
- Print the UPA data only, ask to do another pay item
- Cancel and ask to do another pay item
- End the utility and go back to the pick option view described in item 1 above.
- End the interface.

See Unit Price Analysis Backup Data Report in REPORTS APPENDIX.

4. If cost based unit price analysis is selected by the user, provide a view to enter the ad hoc title information: Project name, Project number, State, Project Length. Provide browse (spreadsheet) type view to select a pay item to do the ad hoc query on and enter labor, equipment and materials needed to perform the work. Allow the user to select the pay item from the master pay item list or to manually enter the pay item or to enter a portion of the pay item description and show items that contain the string and let the user select the item. Provide for input of the quantity for the ad hoc pay item.



Pay Item	Description	Quantity	Unit	Cost	Total
62001-0000	Special Wall	5000	SY	$62.52	$312,600.00

Equipment

Type	Number	No of Units	Unit	Cost/Unit	Total cost
Dozer	1	10	day	$500.00	$5,000.00
Backhoe	1	10	day	$400.00	$4,000.00
					$9,000.00

Labor

Type	Number	No of Units	Unit	Cost/Unit	Total cost
Laborers	5	12	day	$40.00	$2,400.00
Dozer opp	1	10	day	$60.00	$600.00
Backhoe Opp	1	10	day	$60.00	$600.00
					$3,600.00

Materials

Type	Quantity	Unit	Cost/Unit	Total cost
Rock	10000	cuyd	$30.00	$300,000.00
				$300,000.00

Total labor/equip/mat costs	$312,600.00
Total cost/unit for pay item	$62.52

COST BASED UNIT PRICE ANALYSIS EQUIPMENT/LABOR/MATERIALS VIEW. Sample for information only, not the desired final product.

Once all of the labor, equipment and material data is entered a total price for the work is generated. The unit cost for the pay item is determined by dividing the total cost by the quantity. This unit price is then placed in the cost field.

Provide the following save/print options.

- Print the UPA, and save the UPA data, ask to do another pay item
- Save the UPA data only, ask to do another pay item
- Print the UPA data only, ask to do another pay item
- Cancel and ask to do another pay item
- End the utility and go back to the pick option view described in item 1 above.
- End the interface.

Section C6. - INFORMATION TECHNOLOGY SPECIFICATIONS

C.6.1 System Architecture Overview: Design EEBACS as a multi-tiered, web-based system, with the following specific requirements:

C.6.1.1 Data tier: a relational database.

C.6.1.2 Middle tier: EEBACS business logic.

C.6.1.3 Client tier: user interface providing access for system administrators and end users. Incorporate two types of client architectures for the client tier (Section C6.2.5).

C.6.2 System Architecture Requirements:

C.6.2.1 Data tier requirements: relational database using Oracle 10g or later. Provide that the data tier reside on a separate server and be capable of using real-time replication, or other Oracle-approved method for replicating data across a wide-area network. The data tier must be platform-independent and must support communications using Oracle Net8/SQLNet or ODBC over TCP/IP.

C.6.2.2 Application tier requirements: Include any intelligence, management, processing, or other application services in EEBACS business logic or rules in the application tier. The application tier may be composed of multiple services or daemons running on a single server, or may run on individual servers as needed to distribute the application load.

C.6.2.3 Propose alternative configurations (.i.e. having a database and application server located in one division but serving all three or having database and applications servers at each division) including the advantages and disadvantages of each of the proposed configurations.

C.6.2.4 Approved platforms, data and application tiers:

C.6.2.4.1 Windows Server 2003 or later.

C.6.2.5 Client tier requirements:

C.6.2.5.1.1 Client tier – general: must be capable of running on a standard IBM-compatible personal computer with a processor speed of 1 GHz or faster, with 512 MB of RAM or greater, running Windows XP or later with all current service packs, hot fixes, and security patches. Provide access to data through the application tier only; deny direct access to the database tier.

C.6.2.5.1.2 Client tier – communications: Client at field sites must be capable of retrieving data over V.90 dial-up connections running 19.2 Kilobytes per second or faster or through a high speed internet connection. Clients in the division office communicate through the LAN.

C.6.2.5.1.3 Online client: a standard hypertext transfer protocol (HTTP) "web" browser.

C.6.2.5.1.3.1 Must be device/ platform/browser independent.

C.6.2.5.1.3.2 Must meet the requirements of the section of the specification labeled "Collection of User Identifiable Data" (Section C.6.8).

C.6.2.5.1.3.3 Encrypt data sent between a field site and the server must be encrypted using SSL or TLS for access with HTTPS.

C.6.2.5.1.4 Offline client requirements: a "thick" client allowing data entry and editing without a network connection. When a network connection is available, provide the ability for the offline client to connect to the data tier to transfer locally stored data. Provide the ability for the offline client to download data a for use offline. Provide the ability for the offline client to run specified reports.

C.6.2.5.1.5 Provide the ability for the offline client to import and export data in a format that can be transferred to a handheld personal digital assistant (PDA) running Windows Mobile.

C.6.2.5.1.6 A Windows Mobile version of the offline client is not required at this time.

C.6.3 User Access: Allow EEBACS systems administrators to define user, group, and role objects. Compose user objects of a user name and password and use them for authentication. Use group and role objects to grant access to information. When a user successfully authenticates to EEBACS, Present the user with a subset of the available data based on their group membership and assigned role.

C.6.3.1 At the highest level, base access s on whether or not the user is an internal user or external partner.

C.6.3.1.1 Internal users are composed of Federal Lands Highway employees and authorized contractors who work onsite. Further subdivide internal users by the location of their home office, i.e., Eastern Federal Lands, Central Federal Lands, or Western Federal Lands. When an internal

user authenticates to the EEBACS, only provide access to projects that are associated with their home office.

C.6.3.1.2 Grant access to external partners s to the specific project(s) to which they are assigned.

C.6.3.1.3 Base access to data on privilege, with the default level providing the most restricted access to information.

C.6.3.2 Audit Trail: EEBACS must provide the ability to report all transactions, including a record of the users making transactions and the date and time that they occurred.

C.6.3.3 EEBACS must provide for defining users, groups, and roles internally (within EEBACS itself), to an external directory through LDAP, or directly to Active Directory.

C.6.4 Performance Requirements:

C.6.4.1 Availability: Ensure EEBACS provides an average availability of 99.5% during FLH core hours from 6:00 AM ET until 9:00 PM ET, Monday thru Friday. Provide that EEBACS is capable of operating 24-hours per day, 7-days per week, for a minimum period of 30 days.

C.6.4.2 Client performance:

C.6.4.2.1 Online client, local area network connection: ensure the time to perform a complete system page update does not exceed 5 seconds longer than a blank HTML page on the same server. Provide that the blank page has the following title and HTML markup reading: “This is a blank page for system response testing”, or with similar wording. The average update time must not exceed 7 seconds as timed on a stopwatch. The start of the stopwatch would correspond with the click of the mouse. Once the system page is displayed the user must be able to fill in fields on the page without a noticeable delay.

C.6.4.2.2 Online client, dial-up connection: Ensure that response time is the same as for the office except for network latency. Measure network latency by calling up the blank page as noted in C.6.4.2.1 above.

C.6.4.2.3 External Partners: Ensure that response time is the same as for the online client, dial-up connection except for Internet or network latency. Measure network latency by calling up the blank page as noted in C.6.4.2.1 above.

C.6.5 Backup and Recovery: Make EEBACS compatible with accepted Oracle practices and procedures for database backup and recovery. In addition, make EEBACS compatible with Oracle-approved after-market backup software.

C.6.5.1 Error detection: The system must leverage Oracle tools for error detection and data recovery.

C.6.6 Interoperability Requirements

C.6.6.1 Fully document the database schema.

C.6.6.2 Provide the ability to migrate existing data from the EES and PPS into the EBBAC. Test existing data migration during EEBACS testing phases and during implementation.

C.6.6.3 Reports: Make EEBACS capable of generating reports suitable for viewing using the online client and suitable for hardcopy output to a printer or print to Adobe Acrobat. Display report headings on each page of the report. Number each page in the report. Printed reports must fit on normal United States paper sizes without losing text at any edge of paper. Provide the option to print larger reports on either legal or 11”x17” paper as selected by the user.

C.6.6.4 Make data from selected reports exportable to Microsoft Excel, Access, or to delimited text files.

C.6.6.5 Ensure EEBACS supports database queries from external program, subject to access restrictions, through ODBC, SQL/Plus or Oracle Discoverer database queries.

C.6.7 Security

C.6.7.1 Encryption: The database(s) must be encrypted in accordance with Federal standards and policy. Encrypt or protect financial and personal data in such a way that in the course of their normal administrative duties a System Administrator or Database Administrator cannot view that data. Make such data viewable only to members of groups given that particular access or privilege.

C.6.7.2 Login Message: EEBACS must have the ability to display a login-warning message that can be edited by the Systems Administrator. The users must accept the conditions in the login-warning message by clicking on an acceptance button to gain access to the login screen. If the user does not acknowledge acceptance of the login warning the system must exit the program.

C.6.8 Collection of User Identifiable Data: EEBACS must not use persistent cookies, nor may it place any type of permanent file on any client. Session cookies may be used provided that they are cleared after the session terminates. EEBACS must not query any information from the users system. If session cookies are used, the documentation must state that they are being used and explain why they are being used.

C.6.9 Access by External Partners: Make EEBACS accessible by FLH external partners who need to access the system from outside the FHWA WAN. The offeror must address how this access will be provided. The EEBACS specifications must include a list of all TCP/IP port numbers, if any, needed for access through a firewall.

C.6.10 EEBACS Access by System Offeror: Remote access to the system by the offeror for diagnostics or remediation, will be granted on a case by case basis, provided that such access is approved in advance by the FLH System Administrator.

C.6.11 System Delivery and Testing

C.6.11.1 Testing: the offeror must be on-site at the designated FLH office(s) during the initial system testing and for the testing of each major update. Test the Construction component field processes in the field at FLH designated construction sites using both dial and high speed Internet connections. Ensure that all of the necessary functions perform in both the online and off line modes as specified in section C6.2.5.

C.6.11.2 Test each component, and supporting code and applications after delivery and installation and prior to full implementation. Include the following testing (testing not limited to these requirements):

C.6.11.2.1 The release performs as intended.

C.6.11.2.2 Data flows from one component or application to the next

C.6.11.2.3 Security meets requirements are met.

C.6.11.2.4 Section 508 requirements are met.

C.6.11.2.5 Performance and availability specifications are met.

C.6.11.3 Submit test reports to the COTR documenting the tests performed and the outcome of such tests.

C.6.11.4 media: Deliver three sets of media to the government with each component or other portion of the system being implemented. Use CDs or DVDs, and print labels on the media showing the component or application, release number, and release date.

C.6.11.5 Test Deliver new media containing the latest version of the EEBACS to the government after each change, modification or update.

C.6.12 Change Management: Release Policy: The offeror's proposal must include the offeror's Release Plan. The plan must include at least the following:

C.6.12.1 Track the release version number and dates. Offeror must propose a numbering scheme.

C.6.12.2 Track the problems corrected and changes and changes that are made with each release.

C.6.12.3 The date of each change.

C.6.12.4 Provide electronic reports from with each release and as requested by the Government CO or COTR.

C.6.12.5 Include all software release information in the documentation.

C.6.12.6 Operating System Updates or Patches

C.6.12.6.1 Major server operating system updates: When major server operating system updates are released, the offeror is to test EEBACS and provide a plan for migrating to the updated operating system within 6-months of the release of the update.

C.6.12.6.2 Major workstation operating system updates: EEBACS is expected to be compatible with major workstation operating system updates within 9-months of their release.

C.6.12.6.3 Patches: If operating system patches are incompatible with EEBACS, develop t and release updates to EEBACS to address the incompatibility within 30 days. Included patches as part of the maintenance supplied under the contract.

C.6.12.6.4 Installation of patches and upgrades may be delayed at the discretion of the government to meet operational requirements or to comply with FHWA or DOT policies on change management and enterprise architecture.

C.6.12.7 Oracle Updates or Patches.

C.6.12.7.1 Major database system updates: When major database system updates are released (Ex: Oracle 9i to Oracle 10i), the offeror is to provide a plan for migrating the system to the new version within 6-months of

the release. The Government will work in conjunction with the offeror to determine the migration timeline.

C.6.12.7.2 Patches: If patches to database system are incompatible with EEBACS, Develop a plan to address the incompatibility within 30 days.

C.6.12.7.3 Installation of patches and upgrades may be delayed at the discretion of the government to meet operational requirements or to comply with FHWA or DOT policies on change management and enterprise architecture.

C.6.12.7.4 Other Software: The offeror's proposal must include a list of COTS or other software they plan to include in the system. The offeror must provide the same patch and upgrade information for this software as is required for Oracle products as listed above.

C.6.13 Standards Compliance: Section 508 of the Rehabilitation Act: The interface provided by the online and offline clients must comply with the requirements of Section 508 of the rehabilitation act. (http://section508.gov). Provide that the reports generated by EEBACS meet Section 508 requirements. Certify that the EEBACS and all constituent components or other components of the system comply with Section 508 of the Rehabilitation Act and provide documentation of test results or other means used to certify compliance.

C.6.14 Programming Standards: Follow Microsoft and Oracle standards for screen colors, icons, toolbars, etc. If there is a conflict the Microsoft standard is to be used unless approved by the COTR.

C.6.14.1 The system must include a "Help" function. Include in the proposal a description of a proposed system help function for the EEBACS. Follow industry standards for the Help function.

C.6.15 Availability of Source Code: All system design documents, source code and other documentation developed under this solicitation becomes the property of the government and it reserves the right to use such items as it deems necessary.

C.6.15.1 Place all system design documents, source code and other documentation belonging to the offeror and incorporated all or in part into any part of the EEBACS in escrow for the life of this contract and any extensions thereto and must be available to the government in case the offeror should be unable to fulfill its support and maintenance obligations.

C.6.15.2 Place any source code to which the rights do not pass to the government and to which the government does not have access in escrow and must be available to the government if the offeror goes out of business or for other business reasons no longer supports the system.

C.6.16 Support:

C.6.16.1 Length of Support: Provide support for the EEBACS for five (5) years after delivery and acceptance of the EEBACS by the government in one year increments.

C.6.16.2 Support included: Support includes software updates as described in section C.6.12.6 and C.6.12.7.

C.6.16.3 Telephone Support: Hours of Support: Provide telephone support between the hours of 8:00 AM ET and 7:00 PM ET.

C.6.16.4 Contacts: Offeror Contacts: Provide a method whereby there are knowledgeable contact personnel available for all components and function of the EEBACS during the hours set forth in Hours of Support.

C.6.16.5 Government Contacts: Accept as official contacts for support from three contacts per FLH field division, one primary and two alternate contacts per field division. The government will provide the offeror names and phone numbers of official government contacts.

C.6.16.6 Onsite support: Propose a rate for on site support, if needed.

C.6.16.7 The offeror and the government will agree to the amount of onsite support required and the government will authorize such support if needed.

C.6.17 System Enhancements: It is the FHWA's intent to keep system modifications to a minimum; however, some modifications will be required in order to accommodate future changes in design, acquisitions, or constructions procedures or policies. Include in the proposal 1,000 hours for performing this work and include a schedule showing the price that would be charged if additional hours are added, for the 5-years after the acceptance of the EEBACS. These services will be in addition to the EEBACS System Maintenance costs set forth in the B.2 Contract Schedule. No work is to be charged to these hours unless approved in advance by the CO. Any additional hours above the additional 1,000 hours must also be approved by the CO via contract modification before any work is performed.